TN 860 .O43

ecast-Review Issue—Industry's Standard

What's Ahead Now?

WORLD OIL

SCIENCE LIBRARY

"Reed has always made bits of the highest quality . . . and these jet Y bits are the best yet!"

G. W. Wilcox knows what he's talking about. He should—he's been with Reed for 37 of the Company's 39 years of operation.

He started in 1921, just about the time the *first* slush-lubricated rock bit was being introduced to the drilling industry by Reed. Since then he's been on hand to play an important part as new Reed Bits have been developed to keep up with the requirements of ever-tougher, ever-deeper drilling. For example, he shared in the introduction by Reed of the application of *hard metal* to cutting surfaces, which greatly increased footage drilled per bit; and in the development by Reed of the first *roller bearing (anti-friction)* rock bit, which increased footage and lengthened bit life.

Son G. C. Wilcox has also been around for a while, having followed in his father's footsteps and joined Reed in 1943. He has seen at first hand the important Reed contributions of later years—such as the development of the *first* field-replaceable slush nozzle rock bit of Reed unitized design; and of course, the introduction of the most advanced rock bits in use today, Reed Y-Bits—the Regular type as well as the Jet type with exclusive Flush-Flo return ports, pictured at left.

Reed is proud to have loyal, capable employees like the father-and-son team of G. W. and G. C. Wilcox. They are worthy examples of the type of skilled, experienced craftsmen to be found on the Reed team.

Though product designs change to keep pace with changing needs, men like these are your assurance that Reed will always maintain *one* unchanging high standard—the Reed standard—of quality.

Reed Roller Bit Company

Houston 1, Texas

Inspection Leadman G. W. Wilcox, shown talking to his son, has been with Reed 37 years. His son, Electrician G. C. Wilcox, has been with the Company 15 years.

REED Y BITS

Better Protection

with 'INCOR' Sulphate Resistant Cement

...Less Cost, Too

● First used nearly thirty years ago in the East Texas field, then rapidly spreading throughout the Panhandle fields, Central and West Texas and other areas, 'INCOR' 24-Hour Cement reduced the cost of "waiting on cement," saving lost rig time and delayed production.

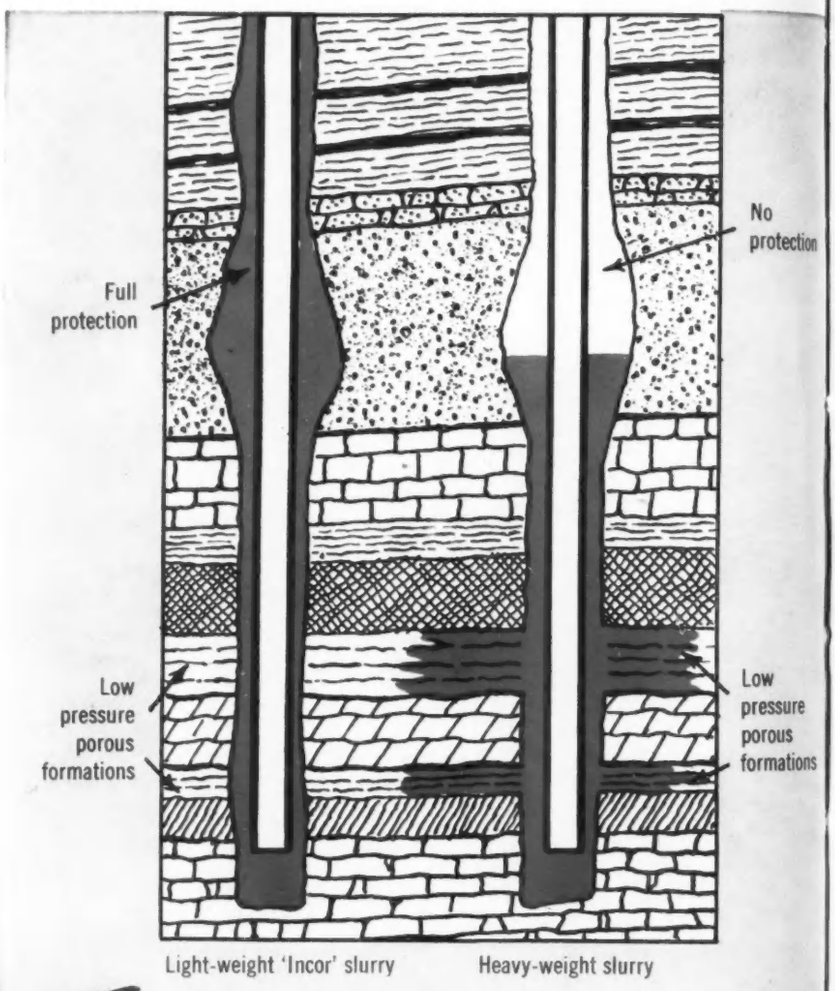
Always-dependable 'Incor' performance has resulted in steady year-after-year increases in the use of America's first high early strength or so-called 'quick-set' cement.

And now 'INCOR' SULPHATE RESISTANT CEMENT—'A DUAL PURPOSE OIL WELL CEMENT' is in steadily widening demand. It provides protection against sulphate attack where needed.

In addition, and of more significant importance in some areas, is the greater yield of slurry per sack of cement—lower cost per cubic foot of slurry back of the casing—lighter slurries that assure better circulation with added protection and dependable high early strength at all times.

There's a Lone Star Cement for every oil well condition—just select the one that fits your job. Performance counts!

*Reg. U. S. Pat. Off.



LONE STAR CEMENT CORPORATION

Offices: DALLAS • HOUSTON • ABILENE, TEX. • NEW ORLEANS • KANSAS CITY, MO. • BIRMINGHAM • ALBANY, N. Y.
BETHLEHEM, PA. • BOSTON • CHICAGO • INDIANAPOLIS • NEW YORK • NORFOLK • RICHMOND • WASHINGTON, D. C.

Established 1916 as THE OIL WEEKLY

WORLD OIL

Volume 146, No. 3 February 15, 1958

Forecast-Review Issue—the Industry's Standard

CURRENT OUTLOOK SECTION

87 Looking Ahead
90 Salient Oil and Gas Statistics of U. S.
93 Editorial Page
94 Supply and Demand
98 Exports and Imports
100 Stocks of Oils
106 Oil and Gas Using Units
107 Crude Oil Prices
108 Gasoline Prices
108 Petroleum Prices vs. All Commodities
109 Refinery Crude Runs
110 Legislative Outlook
Ira P. Bradford

EXPLORATION SECTION

117 U. S. Wildcatting Forecast
121 Successful Wildcats
122 Kinds of Fields Found
123 Wildcat Ratio to All Wells
123 Wildcat Ratio by States
124 Geophysical Crews
125 History of Oil Reserves
127 Location of Oil Reserves
128 Relation of Crude Found to Drilling
130 History of Gas Reserves
132 Location of Gas Reserves
135 Relation of Gas Found to Drilling

DRILLING SECTION

137 U. S. Drilling Forecast
Warren L. Baker and Cecil W. Smith
141 Forecast of Productive Completions
144 Average Depth per Well
144 Average Well Depths by Areas
145 Drilling Depth Records
150 Rigs Operated
152 Rig Penetration Rates
152 Drilling Methods
155 For Whom Wells Are Drilled
155 Drilling by Contractors
156 Drilling Costs
156 Drilling Equipment Costs
158 Ratio of Drilling to Production
158 Ratio of Drilling to Producing Income

PRODUCTION SECTION

163 U. S. Crude Production
168 Natural Gas Production and Use
177 Artificial Lift Forecast
178 Natural Gas Liquids
180 Producing Depth Records
184 Producing Oil Wells
186 Producing Gas Wells
190 LPG Sales

INTERNATIONAL SECTION

195 World Crude Production
200 Canadian Drilling Forecast
202 Drilling Outside U. S. and Canada

INDEX TO STATISTICAL TABLES AND CHARTS, PAGE 9

Turn the page for a "Quick Look" at this issue

a QUICK LOOK at this

BUSY OIL MEN: To help you put first things first, scan these time-saving digests on this and the following pages.

In this issue are your industry's facts and figures —information which, in tabular form, shows quickly and concretely where oil stands RIGHT NOW, and information which, in written form, outlines the trends which are guiding the industry into its future.

These statistics and trends will offer you opportunity to evaluate and to verify for yourself the prospects which lie immediately ahead, and to understand more fully the factors involved in present industry problems.

To begin with, WORLD OIL would like to call your attention to its two-page summary of the important facets of the oil business, a summary which this year has been added as a new feature in this special Forecast-Review Issue. No better quick gage of this year's hopes exist than this analysis which begins on **Page 87.**

CURRENT OUTLOOK

Supply and Demand . . . Petroleum products demand will reflect the general business let-down in 1958, as total demand for all oils is expected to be about the same as in 1957. Exports will drop sharply to normal levels, it is anticipated, after having been abnormally high in 1957 because of the Suez crisis. But domestic consumption will increase 221,000 barrels daily, or 2.5 percent, offsetting the decline in exports ..... **Page 94**

REGULAR DEPARTMENTS

85	Who's Meeting Where
204	Drilling Hints
212	Production Hints
221	Men in the Industry
236	Books, Maps and Movies
237	Association News
238	Companies in the News
240	Service and Supply Men
254	Squeaks from the Bullwheel
260	ADVERTISERS' INDEX

WORLD OIL, published every month except semi-monthly in February and August. Copyright 1958 by The Gulf Publishing Company. Entered as second class mail December 23, 1916, at postoffice at Houston, Texas, under the act of March 3, 1879. WORLD OIL and THE OIL WEEKLY are registered trademarks of The Gulf Publishing Company, Houston, Texas.

Exports and Imports . . . U. S. crude oil imports are likely to be at the same level in 1958 as in 1957, as exports decrease. If imports approximate the government's voluntary restriction program, they will average 990,000 barrels daily in 1958, or 2000 barrels less than the 1957 daily average..... **Page 98**

Stocks of Oil . . . During the past two years, inventories of all oils have increased 119.6 million barrels, or 16.7 percent, to an all-time high of 834.5 million barrels at the beginning of 1958. Gasoline and distillate stocks will present the greatest oversupply problems in 1958, increasing 18.3 and 32.5 percent respectively since the start of 1956..... **Page 100**

Oil and Gas Using Units . . . A record number of oil and gas consuming units were in operation as 1958 began. However, several factors indicate that prospects are not bright for a large growth in demand rate this year ..... **Page 106**

Crude Oil Prices . . . Postings of crude prices, after a general increase of from 25 to 40 cents early in January, 1957, began sliding 15 to 23 cents per barrel last December and in early 1958—due mostly to adjustments after the Suez crisis. Predictions are for a more stable price structure during 1958.... **Page 107**

Gasoline Prices . . . Relatively high gasoline inventories have weakened the price structure of U. S. gasoline. As of January, 1958, wholesale gasoline prices had dropped slightly more than a third of a cent below the average for 1957..... **Page 108**

How Will the Industry Fare in Washington This Year? . . . Legislative proposals over natural gas, imports controls, depletion, tidelands, pipe lines, and related issues must be evaluated under current conditions. And these conditions include the squeeze between high costs and weak prices existing between the production and marketing levels..... **Page 110**

EXPLORATION

U. S. Wildcatting Forecast . . . The drilling of 10,574 wildcats is forecast for 1958, equal to a decrease of 809 wells, or 7.1 percent from 1957. Ability of the U. S. to out-produce current oil needs and the expectation that the domestic industry will experience comparatively little growth during 1958 are factors responsible for the predicted decline..... **Page 117**

Successful Wildcats . . . The 1957 total number of 1438 successful wildcats completed reflected a 10.6

IN YOUR APRIL ISSUE:

issue...

percent decrease as compared with the 11.4 percent drop reached in 1956.....**Page 121**

Kinds of Fields Found . . . A declining rate of new-field discoveries occurred in the U. S. during 1957. This general decrease of 16.4 percent extended to oil, gas and distillate fields.....**Page 122**

Wildcat Ratio to All Wells . . . Wildcatting in 1957 continued to furnish more than 20 percent of all wells completed annually in the U. S. Illinois and Kansas again led the more active drilling states. Almost a fourth of the 21,051 wells completed in Texas during 1957 were wildcats.....**Page 123**

Geophysical Crews . . . The number of active geophysical crews operating in the U. S. at the end of November, 1957, amounted to 544. But that represented a dip of 7.5 percent from the previous year. The nine leading exploration states accounted during 1957 for 90.9 percent of all U. S. geophysical activity, although only three of the nine reported increases during 1957.....**Page 124**

U. S. Petroleum Reserves . . . Liquid hydrocarbon continues to be found faster than it is produced. However, the ratio of crude oil reserves to natural gas liquids is decreasing every year. In 1949 the volume of crude oil reserves was 6.6 times greater than natural gas liquids. At the start of 1957, the ratio was only 5.1 to 1.....**Page 125**

Location of Oil Reserves . . . At the beginning of 1957, 91.4 percent of all U. S. liquid hydrocarbon reserves were located in the states of Texas, Louisiana, California, Oklahoma, Wyoming, Kansas and New Mexico. Total reserves in these states: 33.2 billion barrels, 711 million barrels more than were reported at the start of 1956.....**Page 127**

Relation of Crude Found to Drilling . . . The proving of almost 3 million barrels of new crude oil reserves in 1957 amounted to only 51,827 barrels per total new well drilled in search of production, 13 barrels for each foot drilled and 97,000 barrels per new oil well completed during the year.....**Page 128**

History of Gas Reserves . . . The ratio of reserves to production continued its steady 1-year decline during 1956. The ratio was 22.1 to 1 at the start of 1957, compared with 32.5 to 1 in 1946. Even so, total reserves hit a new high at the beginning of 1957, with 237.8 trillion cubic feet—14 trillion cubic feet more than the previous year.....**Page 130**

Location of Gas Reserves . . . More than 93 percent of total U. S. natural gas reserves are located in six states. Texas' total reserves are more than twice the reserves in Louisiana, the second highest state....**Page 132**

Relation of Gas Found to Drilling . . . For the most part, ratio of new gas reserves developed to drilling effort expended has varied sharply since World War II. However, in both 1955 and 1956 more new reserves have been developed in proportion to drilling activity.....**Page 135**

DRILLING

U. S. Drilling Forecast . . . Underscoring the sharp drilling activity slump experienced in the U. S. during 1957 is the general unhealthy conditions of the industry which are expected to lead to a substantial additional decrease in 1958. WORLD OIL forecasts the drilling of 50,137 new wells and 207.8 million feet of hole this year—6 percent fewer wells than the 53,350 new wells completed in 1957.....**Page 137**

Forecast of Productive Completions . . . The 6 percent drop in drilling activity forecast for the U. S. for 1958 is expected to be paralleled by a similar decline in the number of new producing wells. Indicated drilling rates presage for 1958 the completion of about 29,750 new productive wells, consisting of approximately 25,530 oil wells and 4220 gas and distillate wells.....**Page 141**

Average Depth Per Well . . . One record set by the U. S. drilling industry in 1957 was in the average depth per well category. Drilling 219,404,228 feet of hole in completing 53,350 wells resulted in an average depth of 4113 feet per new completion—an average of 23 feet per well greater than the previous record established in 1955.....**Page 144**

Average Well Depths by Areas . . . With an average depth of 10,480 feet per well, South Louisiana's completions during 1957 continued to record signifiicantly greater average depth than wells completed in other regions of the U. S. The national average in 1957 was only 4113 feet.....**Page 144**

Drilling Depth Records . . . Although the U. S. drilling depth record remained unaltered during 1957, two new areas were tested below the 20,000-foot level, and 10 areas in all recorded new deep drilling records during the year.....**Page 145**

Rigs Operated . . . U. S. drilling rig activity decreased in 1957, averaging 54 rigs less per month than in 1956. In January, 1957, however, drilling rig activity had recorded an average number of rigs operating of 4625, an average of 123 rigs more than reflected in January of the peak drilling year of 1955..**Page 150**

Rig Penetration Rates . . . Penetration rates failed for the first time in 10 years to record a substantial

What does the future hold for exploration activity?

gain. An average of only 11.1 wells and 45,795 feet of hole were drilled for each rig operated during 1957, a sharp decline from the 12.1 wells and 45,583 feet drilled per rig in 1956.....**Page 152**

Drilling Methods . . . For the first time in more than 25 years, the use of rotary rigs last year suffered a slight percentage trend reversal. However, the slight surge of interest in cable tools is not viewed as a shadow of any future trend but rather evidence of the general decline in drilling which occurred last year. It is indicated that a greater portion of this decrease in drilling occurred in areas predominantly served by rotary rigs.....**Page 152**

For Whom Wells Are Drilled . . . For the second consecutive year, small company and individual operator participation in U. S. drilling activity declined. Of the 53,350 wells completed in the U. S. during 1957, small companies and individual operators owned 41,322, or 77.5 percent of the total.....**Page 155**

Drilling by Contractors . . . Drilling 49,616 wells, or 93 percent of all wells drilled in 1957, contractors continued their significant post-war pace. However, contract depth of 204,045,932 feet in 1957 amounted to a decline of more than 14.8 million feet from 1956's peak.....**Page 155**

Drilling Costs . . . As the average contract cost per foot dropped to its lowest level since 1943, average total cost per foot climbed to its highest level in history.....**Page 156**

Drilling Equipment Costs . . . During 1957, all but one of the 21 major pieces of drilling equipment increase in price from the previous year as wholesale prices of major drilling equipment continued in 1957 their rising trend from 1947-1949 indexes..**Page 156**

Ratio of Drilling to Production . . . The general decline in drilling during 1957 resulted in only 20.4 wells being completed for each million of barrels of crude oil produced in the period—an abrupt drop from 1956 and 1955.....**Page 158**

Ratio of Drilling to Producing Income . . . An average of only 6.6 wells was drilled in 1957 for each million dollars of production income. This relationship of the number of wells drilled to income received from production was the lowest ratio in the industry's history.....**Page 158**

PRODUCTION

U. S. Crude Production . . . Reduced increase in demand, decreased export shipments and oversupply of crude oil throughout the world are responsible for the 1958 forecast of U. S. crude production of 7,037,000 barrels daily, a decline of 1.9 percent from 1957.....**Page 163**

Natural Gas Production and Use . . . The rapid increase in marketed production during recent years is expected to slow down sharply in 1958. Reasons: business slump and crippling effects of federal regulations. Predictions are that marketed production will rise only 2.3 percent this year, compared with increases of 6.9 percent in 1957 and 7.4 percent in 1956....**Page 168**

Artificial Lift Forecast . . . In keeping with a 2-year decline in drilling, estimates for wells going on artificial lift and maintenance expenditures for equipment on existing artificial lift wells are expected to drop slightly from 1957. Estimates are that 24,569 wells will be placed on artificial lift, a decrease of 1338 wells from 1957.....**Page 177**

Natural Gas Liquids . . . A record daily production of 824,000 barrels is forecast. In 1957, daily average production amounted to 809,000 barrels...**Page 178**

Producing Oil Wells . . . Compared with 1956, last year was far from impressive for producing oil wells. Total new well completions showed the smallest increase since 1947. Total well abandonments showed the largest increase in six years. And average daily production per well was the lowest it has been since 1950.....**Page 184**

Producing Gas Wells . . . Forecasts indicate a sharp decrease in U. S. drilling activity which presages the completion of fewer new gas and gas-condensate producing wells. However, a record number was being operated in the U. S. at the close of the year—78,869 gas and gas-condensate wells.....**Page 186**

LPG Sales . . . Though the spectacular annual increase in LPG sales tapered off in 1957, the total still reached a new high of 6,907,000,000 gallons. Another record year is forecast for 1958 if the industry takes advantage of the potential markets yet to be developed.....**Page 190**

INTERNATIONAL

World Crude Production . . . Increased production in 30 countries is expected to offset declines in 1958 U. S. and Venezuela output as the world's total daily average production is expected to reach a record level of almost 18,206,000 barrels.....**Page 195**

Canadian Drilling Forecast . . . Drilling activity drop, which began in the last half of 1957, likely will result in completion of 3150 wells and the drilling of almost 12.6 million feet of hole in 1958—a decrease of 293 completions and almost 2 million feet of hole.....**Page 200**

Drilling Outside U. S. and Canada . . . As drilling rates slip behind the pace set last year with its Suez crisis, 5177 new wells are expected to be drilled in the Free World, outside U. S. and Canada. Venezuela is expected to contribute largely to the anticipated 4.3 percent decrease.....**Page 202**

INDEX TO STATISTICAL TABLES AND CHARTS

CRUDE OIL PRODUCTION

Annually by U. S. states since 1859 166-167
Annually and daily, U. S. by years since 1918 163
Annually and daily by U. S. states in 1957 and 1956 165
Annually by countries, 1957 and 1956 196
Average per U. S. well, annually since 1919 184
Average per well, by states, in 1957 185
Cumulative by U. S. states to end 1957 165
Cumulative by countries to end 1957 196
Forecast for U. S. in 1958 163
Forecast for world in 1958 195
Percent of U. S. by states, 1957 and 1956 165
Value annually in U. S. since 1859 167
Value per barrel in U. S., by years 167
U. S. and rest of world, annually since 1918 195

DEMAND FOR U. S. OILS

All Oils:
Total, by months, 1957 and 1956 94
Total, domestic, export, annually since 1918 97
Forecast for 1958 96-97
Distillate Fuel Oil:
Total, by months, 1957 and 1956 94
Total, domestic, export, annually since 1932 97
Forecast for 1958 96-97
Gasoline:
Total, by months, 1957 and 1956 94
Total, domestic and export, annually since 1918 97
Forecast for 1958 96-97
Kerosine:
Forecast for 1958 96
Total, domestic and export in 1957 and 1956 96
Residual Fuel Oil:
Forecast for 1958 96
Total, domestic and export, annually since 1932 97

DRILLING

(See Wells Drilled, Footage Drilled, and Wildcats Drilled)

EXPORTS

All Oils, annually from U. S. since 1918 99
Crude Oil, U. S. annually since 1918 99
Refined Products, U. S. annually since 1918 99
Forecast of all oils from U. S. in 1958 99
Forecast of crude oil from U. S. in 1958 99
Forecast of refined products from U. S. in 1958 99
Exports vs. imports, annually in U. S. since 1946 98

FOOTAGE DRILLED

All (Total) Footage Drilled:
Annually in U. S. since 1925 139
Average per well, U. S. by years 139, 144
Average per well, by states, in 1957 and 1956 140
By contractors, U. S. by years 155
Drilling depth record, U. S. by years since 1927 145
Drilling depth record, by states, end of 1957 146
Forecast for U. S. in 1958, by states 138
Forecast for Canada in 1958 200
Per rig operated, U. S. by years 152
Total states, in 1957 and 1956 140
Costs Per Foot:
By contractors, by years 156
Total, by years 156
Distillate Well Footage:
Average per well, by states, in 1957 140
Total U. S. states in 1957 140
Drilling Depth Records:
In each state, end of 1957 146
In U. S. by years since 1927 145
Dry Hole Footage:
Average per well, by states, in 1957 140
Total U. S. states in 1957 140
Oil Well Footage:
Average per well, by states, in 1957 140
Total, by states, in 1957 140
Old Wells Drilled Deeper Footage:
Average per well, by states, in 1957 140
Total, by states, in 1957 140
Service Well Footage:
Average per well, by states, in 1957 140
Total, by states, in 1957 140
Wildcat Wells: See Wildcat Drilling

GEOPHYSICAL ACTIVITY

Gravity crews working, by states, end of 1957 and 1956 .. 124
Magnetometer crews working, by states, end of 1957 and 1956 124
Seismograph crews working, by states end of 1957 and 1956 124
Total geophysical crews working, by states, end of 1957 and 1956 124

IMPORTS

Annually, U. S., for all oils, crude, and products since 1918 99
Forecast, U. S. in 1958, for all oils, crude, and products ... 99
Imports vs. exports, U. S. annually since 1946 98

LIQUEFIED PETROLEUM GAS

Marketed Production:
U. S., annually since 1922 192
By uses, U. S. annually since 1922 192

NATURAL GAS

Consumption, annually by types of use 170
Cost to users, annually since 1906 173
Customers, annually by types of users 170
Disposition or Use:
By states, in 1956 168
U. S., annually since 1938 170
Exports, U. S., by years 170
Footage Drilled: See Footage Drilled
Imports, U. S., by years 170
Interstate shipments, by years, since 1938 170
Price at wellhead, U. S., annually since 1906 173
Producing Wells: See Producing Wells
Production:
From gas wells, by states, in 1956 168
From gas wells, U. S., annually since 1938 170
From oil wells, by states, in 1956 168
From oil wells, U. S., annually since 1938 170
Gross, by states, in 1956 168
Marketed, by states, annually since 1906 172-173
Per well, annually, since 1936 186
Source by types of wells, annually since 1938 170

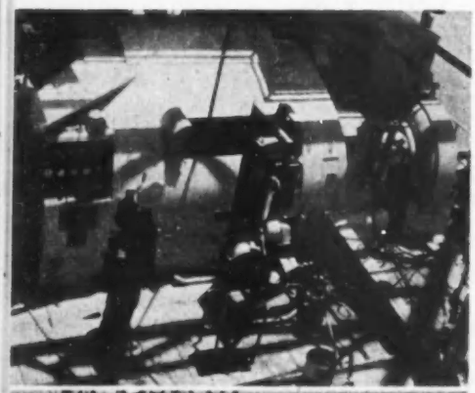
Continued on Page 11

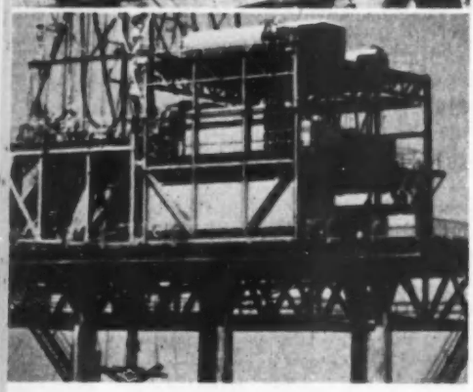
Open-Water Drilling with Tender and Platform

...and the "Oilwell" Equipment is all engineered to work together.

Deep water drilling tender of special design on location in open water off the Louisiana coas

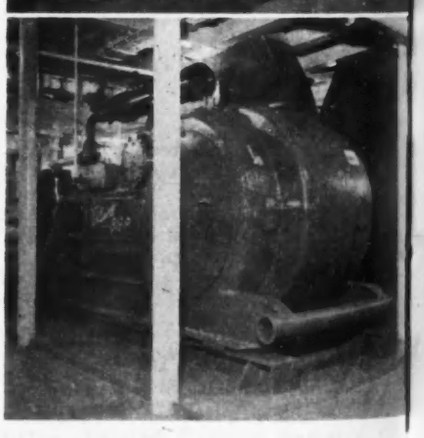
DRILLING CONTRACTORS who are considering tender-and-platform operations will find many advanced features in this installation. "Oilwell" drilling equipment is built into the two movable platform structures, and the tender, as shown by these pictures. Your "Oilwell" Representative will gladly supply detailed information.





Atop the open-water platform is a unitized derrick substructure with "Oilwell" 96 Draw Works and 26-HD Rotary permanently in place. Behind it, a double-decked structure supports well servicing facilities on the upper level and an "Oilwell" 1500 three-engine drive below. An auxiliary mud reservoir, together with an "Oilwell" 220-P mud pump, is built into this section at main platform level to maintain circulation when conditions necessitate removal of the tender.

Major mud circulating facilities are provided on the tender, where an "Oilwell" 1500 three-engine drive on the main deck powers two 818-P pumps located directly below in the hold. Each of these pumps is rated 925 hp input and will displace 930 gpm with maximum-size liners at 65 rpm. Upper deck of the tender provides pipe storage and housing facilities for the crews.



OIL WELL SUPPLY

DIVISION UNITED STATES STEEL CORPORATION

Executive Offices—DALLAS, TEXAS
Export Offices—
30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.

Area Offices— CALGARY, ALBERTA
CASPER, WYOMING . . COLUMBUS, O.
DALLAS, TEXAS . . HOUSTON, TEXAS
TULSA, OKLA. . LOS ANGELES, CALIF.

Branches Serving All Oil Fields

USS TRADE MARK

"OILWELL" TRADE MARK

UNITED STATES STEEL

INDEX TO TABLES AND CHARTS *continued*

Repressuring use, annually since 1938 170
Repressuring use, by states, in 1956 168
Reserves: See Reserves
Storage, Underground:
Net and total by years since 1938 170
Withdrawn annually since 1938 170
Treated at gasoline plants, U. S., by years since 1938 170
Value at point of consumption by types of users, annually since 1938 170
Value at wellhead, annually since 1906 173
Vented and Wasted:
By states, in 1956 168
U. S. annually since 1938 170
Wells Drilled: See Wells Drilled

NATURAL GAS LIQUIDS

Production:
Forecast, U. S. in 1958 178
U. S., annually and daily since 1918 178
Reserves: See Reserves
Stocks, U. S., end 1956 and 1957 90
Value, average at plants, U. S. in 1957 and 1956 90

NEW FIELD DISCOVERIES

(See Wildcats Drilled)

PRICES

Crude Oil:
Average per barrel, U. S. annually since 1918 107
Average per barrel, U. S. annually since 1859 167
Index vs. all commodities 108
Principal grades, changes since 1937 107
Drilling:
Contractors, per foot, by years 156
Total per foot, by years 156
Equipment index trends 156
Gasoline:
Average 50 U. S. cities, annually since 1918 108
Dealer's, annually since 1918 108
Taxes, state and federal, annually since 1918 108
Natural Gas:
Annually at U. S. wellheads 173
Annually at consumption points 170, 173
Annually at consumption points by types of users 170
Natural Gas Liquids:
Average at plants, U. S., in 1957 and 1956 90

PRODUCING WELLS

Condensate Wells:
Drilled Annually, See Wells Drilled
Forecast of 1958 gas-condensate new completions, by states 142
Production per well, by states, end of 1957 185
U. S. by states, end of 1957 185
U. S., gas-condensate, and of each year since 1929 186
Gas Wells:
Abandoned, U. S. annually since 1930 186
Drilled Annually, See Wells Drilled
Forecast of 1958 gas-condensate new completions, by states 142
Production per well, annually since 1936 186
U. S., by states, end of 1957 and 1956 186
U. S. gas-condensate, end of each year since 1929 186
Oil Wells:
Abandoned past year, by states 177
Abandoned, U. S., annually since 1918 184
Artificially lifted, by states, end of 1957 ..... 177, 185
Artificially lifted, forecast of wells to go on lift in 1958, by states 177
Artificial lift, wells put on lift past year, by states 177
Artificial lift, equipment maintenance expenditures, 1958 forecast, by states 177
Drilled Annually, see Wells Drilled
Flowing, by states, end of 1957 185
Forecast of 1958 completions, by states 142
Producing, by states, end of 1957 185
Producing, U. S., end of each year since 1918 185
Production per well, U. S., by years since 1918 184
Production per well, by states, end of 1957 185
Producing Depth Records:
In each state, end of 1957 181
U. S., successively by years since 1927 180

RESERVES

Crude Oil:
By states, beginning 1957 and 1956 127
Developed annually, U. S. since 1900 126
In U. S., end each year since 1900 126
Ratio to production, annually since 1900 126
Developed annually in ratio to wells and footage drilled 128
Liquid Hydrocarbon:
By states, beginning 1957 and 1956 127
Developed annually, U. S. since 1946 126
In U. S., end each year since 1946 126
Ratio to production, annually since 1946 126
Percent of U. S. by states, in 1957 127
Natural Gas:
By states, beginning 1957 132
Developed annually, U. S., since 1946 130
Developed annually in ratio to wells and footage drilled 135
Percent of U. S., by states, 1957 132
Ratio to producing rates, annually since 1946 130

REFINING OPERATIONS

Capacity in U. S., end 1957 and 1956 109
Capacity percent operated, end of 1957 and 1956 109
Crude runs to stills in U. S., annually since 1918 109
Crude runs to stills, forecast for U. S. in 1958 109
Crude runs to stills, by districts, during 1957 and 1956 109
Domestic crude runs, 1956, 1957 and 1958 forecast 90
Foreign crude runs, 1956, 1957 and 1958 forecast 90

RIG ACTIVITY

Average per year, U. S., since 1938 150
Footage drilled per rig, U. S. annually since 1938 152
Operated in U. S., by months, each year since 1938 150
Wells drilled per rig, U. S., annually since 1938 152
Wells drilled by rotary and cable tool rigs, annually 152

STOCKS OR STORAGE

All Oils:
U. S., end each year since 1918 105
Days' supply, end of each year since 1918 105
Crude Oil:
Days' supply, end of each year since 1918 105
U. S., end each year since 1918 105
U. S., by months, 1957 and 1956 105
By U. S. districts, end of 1957 and 1956 105
Gasoline:
U. S., end each year since 1918 105
Days' supply, end of each year since 1918 105
By U. S. districts, end of 1957 and 1956 105
U. S., by months, 1957 and 1956 105
Distillate Fuel Oil:
Days' supply, end of each year since 1918 105
By U. S. districts, end of 1957 and 1956 105
U. S., end each year since 1918 105
U. S., by months, 1957 and 1956 105
Kerosine:
U. S., end of 1956 and 1958 91
Natural gas, underground, yearly since 1938 170
Refined products, U. S. total, end of 1957 and 1956 100
Residual Fuel Oil:
By U. S. districts, end of 1957 and 1956 105

Continued on Page 12

INDEX TO TABLES AND CHARTS *continued*

WELLS DRILLED

All (Total) Wells Drilled:
- Annually in U. S. since 1918 139
- By states, in 1957 and 1956 140
- By small and large firms 155
- By rotary and cable tool methods annually since 1945 ... 152
- By contractors, by years since 1941 155
- By areas, outside U. S. and Canada, 1955, 1956 and 1957 202
- Forecast for U. S. in 1958, by states 138
- Forecast for Canada in 1958 200
- Forecast by areas, outside U. S. and Canada, in 1958 ... 202
- Forecast, percent of U. S. in 1958 138
- Per rig operated in U. S. by years 152
- Per million barrels produced, U. S. by years 158
- Per million dollars of income, U. S. by years since 1937 .. 158
- Percent productive and dry, U. S., by years since 1937 ... 141
- Percent of U. S. by states in 1957 140

Costs:
- Drilling equipment price index trends 156
- Per foot by contractors by years 156
- Total per foot by years 156

Distillate Wells Drilled:
- Annually in U. S. since 1942 139
- By states in 1957 140
- Forecast for gas-condensate in U. S. in 1958, by states ... 142
- Footage, see Footage drilled percent of total wells 141

Dry Holes Drilled:
- Annually in U. S. since 1918 139
- By states in 1957 140
- Footage, See Footage Drilled

Gas Wells Drilled:
- Annually in U. S. since 1918 139
- By states in 1957 140
- Footage, See Footage Drilled
- Forecast for gas-condensate in U. S. in 1958, by states ... 142
- Percent of total wells 141

Oil Wells Drilled:
- Annually in U. S. since 1918 139
- By states in 1957 140
- Footage, See Footage Drilled
- Forecast for U. S. in 1958, by states 142
- Percent of total wells, U. S. by years 141

Old Wells Drilled Deeper:
- By states in 1957 140
- Annually in U. S. since 1918 139
- Footage, See Footage Drilled

Service Wells Drilled:
- Annually in U. S. since 1929 139
- By states, in 1957 140

Wildcats Drilled: See Wildcat Drilling

WILDCAT DRILLING

All (Total) Drilled:
- Annually in U. S., by years, since 1937 120
- By states in 1957 119
- Ratio to all U. S. wells drilled 120
- Forecast for 1958, by states 117

Dry wildcats, by states, in 1957 119

Footage:
- Annually, U. S., for oil, distillate, gas, dry and total since 1937 119
- By states, for oil, distillate, gas, dry and total in 1957 ... 119
- Average per well, by states, for oil, distillate, gas, dry and total in 1957 119
- Average per well, U. S., for oil, gas, dry and total since 1937 119

New Fields Found: See Productive, Wildcat Drilling

Productive:
- Annually, U. S., for oil, gas and distillate, by years since 1937 120
- By states, oil, gas and distillate, in 1957 119
- Percent, U. S., by states in 1957 120
- Percent, past 20 years, by states 120
- Percent, U. S., by years since 1937 120
- Twenty-year record, total and productive, by states 120

WORLD OIL

RAY L. DUDLEY, Founder, 1891-1957

WILLIAM G. DUDLEY ..... Publisher
TOM W. NELSON ..... General Manager
R. M. DE SOMBRE ..... Assistant General Manager
WARREN L. BAKER ..... Editorial Director
DONALD E. KLIEWER ..... Editor
L. J. LOGAN ..... Associate Editor, Economics
JOHN N. SCHUELKE ..... Associate Editor, Technical
WALLACE FITZGERALD ..... Managing Editor
CECIL W. SMITH ..... Statistical Editor
PERRY R. HILLEGEIST ..... Engineering Editor
JOHNNY H. HEDRICK ..... Engineering Editor
DON E. LAMBERT ..... Management and Personnel Editor
GILBERT M. WILSON ..... Western District Editor
ANTHONY GIBBON ..... Mid-Continent District Editor
HARRISON T. BRUNDAGE ..... Eastern District Editor
JACK COCKERHAM ..... Presentation Editor
FERN C. REED ..... Editorial Assistant
MARGARET McKENZIE ..... Editorial Assistant
KATHERYNE BAST ..... Editorial Assistant
EUNICE M. OKONESKI ..... Librarian

ABC HSP

ADVERTISING

Nelson Bigelow, Advertising Sales Manager. *Representatives:* NEW YORK (17): Sam Sorrell, Gene Hart, George Skelton, 250 Park Ave., Phone YUkon 6-6558; CLEVELAND (16): Bill Westfall, Harvey Dunn, 20800 Center Ridge Road, EDison 3-1650; CHICAGO (4): H. G. Fitzpatrick, Martin Halloran, 332 So. Michigan Ave., Phone Wabash 2-9330; LOS ANGELES: Jay Curts, W. W. Wilson Bldg., Huntington Park, Phone Ludlow 7-1219; TULSA (3): Jim Isaacks, 916 Enterprise Bldg., CHerry 2-9211; DALLAS (8): Ed Thompson, 1808 Sylvan Drive, Phone RIverside 7-7344; HOUSTON (19): Charles Wyatt, James W. Merrill, 3301 Buffalo Drive, Phone JAckson 9-4301; EUROPEAN: Theodor Miocha, Agent, Limmerstrasse 31, Hannover, Germany, Phone 4-2935; UNITED KINGDOM: Frank Chambers, Agent, 120 Moorgate, London, E. C. 2, Phone Monarch 5661. Advertising rates on application.

SUBSCRIPTIONS

T. A. Gaden, Subscription Manager, P. O. Box 2608, Houston, Texas, U. S. A.

Single copies 50 cents (except special issues). Double prices for single copies more than one year old. Subscription price: domestic and foreign, $2 a year.

WORLD OIL published every month except semi-monthly in February and August. Copyright, 1958, by The Gulf Publishing Company. WORLD OIL and THE OIL WEEKLY are registered trademarks of The Gulf Publishing Company, Houston, Texas.

Specialized oil publications of THE GULF PUBLISHING COMPANY 3301 Buffalo Drive, Houston 19, Texas; Box 2608, Houston 1, Texas. Cable Address: GULFPUBCO.

WORLD OIL and THE COMPOSITE CATALOG for the drilling-producing industry.

PETROLEUM REFINER and THE REFINERY CATALOG for the refining-natural gasoline-petrochemical industry.

PIPE LINE INDUSTRY and THE PIPE LINE COMPOSITE CATALOG for the oil and gas pipe line industry.

Indexed by Industrial Arts Index and Engineering Index

Looking ahead at 1958

A number of economic difficulties confront the oil industry in 1958. It suffers from a malady common to many businesses today, namely mounting supply and a slower rate of growth in consumption.

In sharp contrast with the industry's normal experience of undergoing substantial growth each year, prospects indicate there will be little if any increase in the demand for U. S. oils in 1958 (**Page 94**). It is estimated that total domestic and export demand for U. S. oils will average 9,369,000 barrels per day in 1958, only 2000 barrels larger than the disappointing gain recorded in 1957 despite heavy emergency shipments to Western Europe during the Suez Canal crisis.

Domestic demand is expected to rise to a new peak of 9,024,000 barrels daily. While this is 221,000 barrels per day above 1957 rates, it is below normal annual growth rates. This estimate assumes a return to normally cold winter weather in the oil heating area, something which the industry has not enjoyed for several years.

A larger increase in domestic consumption would be forecast for 1958 were it not for the anticipation that industrial levels will continue below 1956 peaks. Likewise, home building is expected to slow down, and gas is seen as continuing its aggressive competition for installaton of heating equipment. Gas is now a serious competitor to oil. The very rapid growth of gas (**Page 106**) has been a factor in reducing oil consumption growth.

Growth in domestic demand probably will merely offset anticipated losses in export shipments, which will drop sharply because of the heavy emergency shipments made to Western Europe in early 1957. There is nothing to indicate export shipments will be above normal rates in 1958. Therefore, export demand of about 345,000 barrels per day is likely in 1958, a decline of 219,000 barrels from 1957's peak (**Pages 94 and 98**). This loss is only 2000 barrels less than the predicted gain in domestic demand.

Less oil will be produced in the U. S. during 1958 than in 1957. Many factors presage a decline in U. S. crude oil producing rates. Demand is expected to show little change from 1957 rates. Imports are likely to be about the same as in 1957, and U. S. production of natural gasoline will increase. When these conditions are coupled with excessive inventories of refined products, the likelihood that less oil will be produced becomes obvious.

It is highly desirable that excessive refined product stocks, especially of gasoline and distillate fuel oil, be reduced (**Page 100**). If excessive refined product stocks are to be reduced, U. S. crude runs to refinery stills must not exceed 1957 levels of 7,927,000 barrels per day (**Page 109**).

In view of abnormally large exports of crude during 1957, the need to reduce excessive stocks leads to the conclusion that U. S. crude oil production must be held below 1957 rates. Therefore, it is predicted that U. S. crude oil production in 1958 should not average more than 7,037,000 barrels per day, 132,000 barrels less than the 7,169,000 barrels daily average in 1957 (**Page 163**).

Imports will be about the same during 1958 as in 1957. This will be true, although the government's restrictions on crude oil imports have reduced them substantially from the July peak of 1,257,000 barrels daily.

Despite government limitations, crude oil imports are likely to average 990,000 barrels daily in 1958. This is only 2000 barrels less than the daily average in 1957 (**Page 98**).

Due to the surplus of refined products existing in the U. S., imports of refined products may drop slightly to an estimated 507,000 barrels per day, 27,000 barrels below 1957's daily average.

The remainder of the U. S. demand will be supplied by domestic production of natural gasoline. Rapid expansion of U. S. natural gasoline production since the war has boosted it to volumes which make it an important factor in the supply picture. The production of 824,000 barrels of natural gasoline daily is predicted for 1958, compared with 809,000 barrels per day in 1957 (**Page 168**).

One note of encouragement is that crude oil producing rates expected in 1958 will be considerably above the drastically reduced levels of the past six months.

Machining spur gears made from Bethlehem forged-and-rolled blanks.

When the Blank is Sound, Machining Costs Go Down

You probably know a machinist whose specialty is gears. Some day ask him what a sound blank means in terms of machining speed. Ask him how a sound blank reduces costs.

Directly or indirectly, his answers will tell you why Bethlehem gear blanks are so widely specified. Wherever these sturdy Bethlehem products are used, their advantages are instantly apparent. Made in a two-way mill that both forges and rolls the steel, they are highly uniform and very strong throughout. Internal structure is excellent. There are no hidden pitfalls beneath the surface to snag the cutting tool, delay the work, or cause rejects. These circular blanks can be turned, bored, faced, and hobbed with complete assurance of a good finished job in every respect.

You can obtain Bethlehem forged-and-rolled blanks in sizes from 10 to 46 in. OD, heat-treated or untreated. They are available in a wide range of sections. Use them not only for gears, but for crane and sheave wheels, flywheels, turbine rotors, brake and clutch drums, pipe flanges, etc. Many details are covered in Booklet 216, a copy of which will be mailed at your request.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

The predicted production of 7,037,000 barrels daily contrasts with the production of 6,800,000 barrels of crude during the last six months of 1957. Furthermore, the production of 7 million barrels per day is a lot of oil, being greater than any quantity produced in any year prior to 1956.

On the other hand, a greater number of producing wells will be trying to participate in U. S. reduced producing volume during 1958. The year started with a record number of oil wells in operation (**Page 184**). A total of 563,543 producing oil wells were being operated in the U. S. at the first of 1958. This total will be increased by new completions during the year.

The increase in producing oil wells without a corresponding gain in production has caused a steady decrease in daily average production per well. At the beginning of 1958, daily production of the U. S. was equal to 12.1 barrels per well. A year before the average had been 13.3 barrels a well.

A sizable decline in drilling is forecast for 1958, although U. S. drilling activity slumped sharply in 1957. Less production means less revenue. In addition, profits on producing operations are likely to be further pinched by higher operating costs (**Page 156**). The conditions will lead to efforts on the part of U. S. producers to curb expenditures for drilling operations.

The drilling of 50,137 wells in the U. S. is forecast by WORLD OIL, 6 percent less than drilled in 1957 (**Page 137**). The predicted decline follows a sharp reduction in U. S. drilling activity during 1957, the first year since 1949 that drilling has failed to register a gain over the preceding year. During 1957 there were only 53,350 new wells completed in the U. S., 5000 less than the 58,400 peak reached in 1956.

WORLD OIL also forecasts a decrease in amount of footage drilled. Footage is seen as declining to 207,800,000 feet, a decrease of 11⅔ million feet from the 219,400,000 feet drilled in 1957 (**Page 137**). This is a decline of 5.3 percent.

A smaller drop in footage than in wells is forecast because of greater average depths per well (**Page 142**).

The sharp reduction in drilling activity during 1957 took place primarily because small companies and individual operators drilled far fewer wells. Drilling by the 22 largest U. S. oil producing companies was only 656 wells, or 5.1 percent, below the 1956 peak of 12,684 wells (**Page 155**).

On the other hand, drilling by small companies and individual operators fell 4412 wells, or 10.7 percent, from the 1956 peak of 45,734 wells.

Large companies are expected to curtail their 1958 drilling activity by a lesser extent than small companies and individual operators. More stringent limitations on producing rates have reduced profit margins of small concerns to the point they do not have sufficient funds to conduct extensive drilling programs.

Contractors face added difficulties because of the decline in U. S. drilling operators. The number of rigs operated in the U. S. dropped to an average of 4791 per month in 1957. (**Page 150**). This compared with 4867 and 4845 active rigs during 1955 and 1956 respectively.

The decline would have been greater had rig penetration rates not failed to establish a substantial gain for the first time in 10 years. An average of only 11.1 wells and 45,795 feet of hole were drilled per rig operated in 1957, a sharp decline from the previous year (**Page 152**). This probably was caused by the operation of more old equipment, as contractors postponed replacement of worn and obsolete units because of their financial pinch resulting from higher costs (**Page 156**) and a further decrease in prices they received (**Page 156**).

Another decline in number of rigs operated is indicated for 1958 by the anticipation that drilling activity will suffer another substantial reduction.

The U. S. is not the only nation that is feeling the impact of surplus supplies of oil. Canada and Venezuela also found it necessary to make sizable reductions in producing rates during the last half of 1957. They felt the return of Middle East production to international markets following the reopening of the Suez Canal, and also were hurt by U. S. limitations on imports. Neither country can look forward to much relief in 1958, and they will surely produce less oil than during 1957.

On the other hand, Middle East oil production is expected to climb to another all-time peak. The gain in Middle East production will be of sufficient magnitude to offset decreases in the U. S., Venezuela and Canada, and still be largely responsible for world crude oil production rising to a new peak in 1958.

Indications are that world crude oil production will rise to a new record volume of approximately 18,200,000 barrels per day in 1958 (**Page 195**). This would constitute a 600,000-barrel gain over 1957 rates, the smallest growth experienced in several years.

Less drilling will occur in both Canada and Venezuela as a result of curtailed producing rates.

Completion of only 2700 new wells is forecast for Western Canada, compared with 2993 in 1957 and with a peak of 3391 wells in 1956 (**Page 200**).

The forecast for Venezuela is 1500 wells during 1958, which contrasts with the peak of 1860 reached during 1957 (**Page 202**).

Although there will be increased drilling in some of the less active regions of the world, the slump in Venezuela activity will be sufficient to cause a reduction in total Free World drilling outside of Canada and the U. S. (**Page 202**).

Over-supply troubles have been experienced before by the oil industry, but in a different form. In previous periods of over-production, excess supply has existed only in the U. S. Today, substantial excess oil producing ability exists in all major producing areas of the world.

Therefore, the industry finds it advisable to curtail its development rates until rising demand again creates a reasonable balance with supply.

Salient oil and gas statistics of U.S. fo9

ITEM	THOUSANDS OF BARRELS, EXCEPT AS NOTED				
	1956	1957	% Diff. of '56-'57	1958 Forecast	% Diff. '57-'58
Total Demand, All Oils	**3,370,573**	**3,418,955**	**+ 1.4**	**3,419,685**	.....
(Daily Average)	9,209	9,367	+ 1.7	9,369	.....
Gasoline, Total Demand	1,408,651	1,430,800	+ 1.6	1,456,350	+ 1.8
(Daily Average)	3,849	3,920	+ 1.8	3,990	+ 1.8
Kerosine, Total Demand	120,621	112,785	— 6.5	108,040	— 4.2
(Daily Average)	329	309	— 6.1	296	— 4.2
Distillate Fuel Oil, Total Demand	650,391	669,410	+ 2.9	670,505	+ 0.2
(Daily Average)	1,777	1,834	+ 3.2	1,837	+ 0.2
Residual Fuel Oil, Total Demand	590,690	577,430	— 2.3	571,590	— 1.0
(Daily Average)	1,614	1,582	— 2.0	1,566	— 1.0
Domestic Demand, All Oils	**3,213,187**	**3,213,095**	.....	**3,293,760**	**+ 2.5**
(Daily Average)	8,779	8,803	+ 0.3	9,024	+ 2.5
Gasoline, Domestic Demand	1,373,079	1,392,475	+ 1.4	1,423,500	+ 2.2
(Daily Average)	3,752	3,815	+ 1.7	3,900	+ 2.2
Kerosine, Total Demand	117,324	107,310	— 8.5	105,850	— 1.4
(Daily Average)	320	294	— 8.1	290	— 1.4
Distillate Fuel Oil, Domestic Demand	615,856	622,690	+ 1.1	644,955	+ 3.6
(Daily Average)	1,682	1,706	+ 1.4	1,767	+ 3.6
Residual Fuel Oil, Domestic Demand	562,813	538,740	— 4.3	544,580	+ 1.1
(Daily Average)	1,538	1,476	— 4.0	1,492	+ 1.1
Exports, Total, Crude Oil and Refined Products	**157,386**	**205,860**	**+30.8**	**125,925**	**—38.8**
(Daily Average)	430	564	+31.2	345	—38.8
Crude Oil Exports	28,624	49,640	+73.4	10,950	—78.0
(Daily Average)	78	136	+74.4	30	—78.0
Refined Products Exports	128,762	156,220	+21.3	114,975	—26.4
(Daily Average)	352	428	+21.6	315	—26.4
Crude Runs to Stills, Total	**2,905,106**	**2,893,355**	**— 0.4**	**2,893,355**	.....
(Daily Average)	7,937	7,927	— 0.1	7,927	.....
Domestic Crude Runs to Stills	2,563,655	2,531,484	— 1.2	2,532,005	0.0
(Daily Average)	7,004	6,936	— 1.0	6,937	0.0
Foreign Crude Runs to Stills	341,451	361,871	+ 6.0	361,350	— 0.1
(Daily Average)	933	991	+ 6.2	990	— 0.1
Crude Oil Production	**2,617,283**	**2,617,467**	.....	**2,568,505**	**— 1.9**
(Daily Average)	7,151	7,171	+ 0.3	7,037	— 1.9
Value at Wells, $ Thousand	7,249,874	8,114,148	+11.9	7,910,995	— 2.5
Average Value, $ Barrel	2.77	3.10	+11.9	3.08	— 0.7
Natural Gas Liquids Production	**292,727**	**295,285**	**+ 0.9**	**300,760**	**+ 1.9**
(Daily Average)	800	809	+ 1.1	824	+ 1.9
Average Value at Plants, ¢ per gallon	5.4	5.5	+ 1.9	.....	.....
Imports, Total, Crude Oil and Refined Products	**525,591**	**556,990**	**+ 6.0**	**546,405**	— 1.9
(Daily Average)	1,436	1,526	+ 6.3	1,497	— 1.9
Crude Petroleum Imports	341,833	362,080	+ 5.9	361,350	— 0.2
(Daily Average)	934	992	+ 6.2	990	— 0.2
Refined Products Imports	183,758	194,910	+ 6.1	185,055	— 5.1
(Daily Average)	502	534	+ 6.4	507	— 5.1

956 and 1957 and forecasts for 1958

ITEM	NUMBER, EXCEPT AS NOTED				
	1956	1957	% Diff. '56-'57	1958	% Diff. '57-'58
Nat'l Gas Marketed Production, Bln. Cu. Ft.	**10,082**	**10,688**	**+ 6.0**	**11,100**	**+ 3.9**
Value at Consumption Points, ¢ per M. Cu. Ft.	41.3	42.9	+ 3.9	44.0	+ 2.6
Value at Wells, ¢ per M. Cu. Ft.	10.8	11.2	+ 3.7	11.5	+ 2.7
Stocks, End of Year, All Oils, Thousand Barrels	**780,391**	**834,521**	**+ 6.9**	**830,506**	**— 0.5**
(Days' Supply)	85	89	+ 4.7	89	.....
Crude Oil Stocks, Thousand Barrels	266,014	276,561	+ 4.0	276,561	.....
(Days' Supply)	34	35	+ 2.9	34	— 3.0
Natural Gas Liquids Stocks, Thousand Bbls.	20,559	23,300	+13.3	23,300	.....
Refined Products Stocks, Thousand Barrels	493,818	534,660	+ 8.3	530,645	— 0.8
Gasoline Stocks, Thousand Barrels	187,271	196,377	+ 4.9	.....	.....
(Days' Supply)	49	50	+ 2.0	.....	.....
Distillate Stocks, Thousand Barrels	133,981	150,769	+12.5	.....	.....
(Days' Supply)	75	82	+ 9.3	.....	.....
Kerosine Stocks, Thousand Barrels	31,420	28,614	— 8.9	.....	.....
Residual Stocks, Thousand Barrels	44,491	59,314	+33.3	.....	.....
New Fields Discovered, Total	**1,438**	**1,202**	**—16.4**	.....	.....
New Oil Fields Discovered	1,070	843	—21.2	.....	.....
New Distillate Fields Discovered	110	120	+ 9.1	.....	.....
New Gas Fields Discovered	258	239	— 7.4	.....	.....
Wildcats Drilled	**12,624**	**11,383**	**— 9.8**	**10,574**	**— 7.1**
Productive Wildcats Drilled	1,438	1,202	—16.4	.....	.....
Non-Productive Wildcats Drilled	11,186	10,181	— 9.0	.....	.....
Well Completions, Total	**58,894**	**53,734**	**— 8.8**	.....	.....
New Wells Completed, Total	**58,418**	**53,350**	**— 8.7**	**50,137**	**— 6.0**
Oil Wells	30,641	27,364	—10.7	25,530	.....
Distillate Wells	551	748	+35.8	4,220	— 5.7
Gas Wells	3,944	3,727	— 5.5		
Dry Holes	22,254	20,156	— 9.4	20,387	— 5.2
Input and Disposal Wells	1,028	1,355	—68.2		
Old Wells Drilled Deeper	**476**	**384**	**—19.3**	.....	.....
Footage Drilled, Total Wells, Thousand Feet	**235,891**	**219,767**	**— 6.8**	.....	.....
Footage Drilled, New Wells, Thousand Feet	**235,386**	**219,404**	**— 6.8**	**207,800**	**— 5.3**
Development Footage, Thousand Feet	176,844	165,530	— 6.4	.....	.....
Wildcat Footage, Thousand Feet	58,543	53,874	— 8.0	.....	.....
Footage Drilled, Old Wells, Thousand Feet	**504**	**363**	**—28.0**	.....	.....
Wells Drilling, End of Year	**4,885**	**4,569**	**— 6.5**	.....	.....
Wells Drilling During Year, Average	4,845	4,791	— 1.1	.....	.....
Producing Oil Wells, End of Year	**554,774**	**563,710**	**+ 1.6**	.....	.....
On Artificial Lift	487,517	495,489	+ 1.6	.....	.....
Flowing Oil Wells	67,257	68,221	+ 1.4	.....	.....
Producing Gas and Condensate Wells, Yr. End	**76,308**	**78,869**	**+ 3.4**	.....	.....
Gas Wells	70,171	71,761	+ 2.3	.....	.....
Condensate Wells	6,137	7,108	+15.8	.....	.....

Good Wells Make Good News

A Monthly Report Of Successful Well Treatments

February 15, 1958

Fracturing treatments using acid-base fluids combine the advantages of acidizing and fracturing. When "tailored" to well conditions, these treatments often give a quicker payout, a slower decline, a larger drainage area, and greater ultimate recovery than either fracturing or acidizing alone. Here are some examples of recent Dowell acid-fracture treatments.

- **Young County, North Texas.** *Production was increased from a show to 12 bopd, stabilized,* when Dowell used Frac Acid*. The well was completed through perforations into the Caddo Lime (3966 to 3980 feet). It was treated down casing with 10,000 gallons of 10 per cent thickened acid and 10,000 pounds sand following a 500-gallon spearhead of Mud Acid. 20 ball sealers were used during treatment. Average injection-rate was 21 bpm at 2200 psi maximum.

- **Ector County, West Texas.** Production was increased from zero to 213 bopd, stabilized, after Dowell used Duofrac*. The treatment, which cost $7500, took less than four months to pay out despite stringent proration at 82 bopd. The well, completed in the Goldsmith Clearfork 5600 (5696 to 5736 feet) would not produce before stimulation. A four-stage treatment was used: (1) 500-gallon spearhead of Mud Acid, (2) 10,000 gallons fresh water with de-emulsifying agent, (3) 25,000 gallons 7½ per cent acid with de-emulsifying agent and 25,000 pounds sand, and (4) 10,000 gallons fresh water with de-emulsifying agent as a flush. *Potential after 35 days was 360 bopd. After 95 days, 273 bopd.*

- **Barber County, Kansas.** This well potentialed 7500 mcfd immediately after Acid Petrofrac*. A drill stem test showed no production before fracturing. Well was completed in the Mississippi Chat through perforations from 4625 to 4660 feet. After a drill stem test, 500 gallons of Mud Acid was injected slowly. Then well was treated with Acid Petrofrac. 20,000 gallons acid-crude oil emulsion, carrying 20,000 pounds of sand, was injected at an average rate of 29 bpm. *This is believed to be the only well in the area to become a commercial producer after such a poor drill stem test.*

- **Caddo Parish, North Louisiana.** Slim hole well potentials 1800 bopd in a field of six to 20 bopd producers. This well was completed in the Fredricksburg lime of the Bethany Field (2400 feet, 12 feet of perforation) using 2½-inch tubing as casing. Dowell used a 1000-gallon spearhead of 15 per cent regular acid, then Acid Petrofrac using 10,000 gallons acid-oil emulsion and 20,000 pounds sand. Injection averaged 6 bpm at 1700 psi. *Potential was stable at 1800 bopd sixty days after treatment.*

Many questions must be answered about your well if the best results are to be obtained. That's why your Dowell engineer keeps records on formation characteristics. That's why he sometimes asks for a sample of the formation or produced fluid before recommending a treatment. When he does get the information he needs, he can recommend a treatment tailored to your requirements.

For more information or service, call any of the 165 Dowell offices in the United States and Canada; in Venezuela, contact United Oilwell Service. Or write Dowell Incorporated, Tulsa 1, Oklahoma.

Services for the oil industry

DOWELL

A SERVICE SUBSIDIARY OF THE DOW CHEMICAL COMPANY

*Servicemark of Dowell Incorporated

Vigilance, patience, restraint needed

The industry must come to recognize that petroleum demand growth is likely to undergo more frequent fluctuations in future years. The industry can no longer operate on the basis that every year will see a sizable and invariable increase in oil demand. The general trend will be upward, but year to year growth rates will not be as assured and steady as in the past.

Once the industry accepts the inevitability of greater and continuing fluctuations, disappointment over any particular failure of demand to measure up to yearly expectations will not be as severe an impact on its economy.

The industry must then learn to live with these fluctuations. This means it must expect to exercise greater vigilance in tailoring its producing and refining operations to whatever levels are dictated by demand.

•

Greater fluctuations will occur in oil demand more frequently in the future because of a number of important changes in the industry's economic position.

Sales of fuel oil for heating purposes has undergone tremendous growth in the U. S. since World War II. This has made distillate fuel oil the second largest product of the industry. Therefore, oil demand has come to be more and more dependent on the weather, which is the most unpredictable of all factors. Whether the winter months are colder or warmer than normal can make a great deal of difference in U. S. oil requirements.

In addition, industrial use of oil has increased greatly. This is true not only in the U. S., but also in a number of other countries. Petroleum now supplies such a large portion of the industrial power that oil demand in the future will more closely parallel the volume of industrial economy, which can and does undergo considerable change in normal times.

In view of these conditions, oil will experience more frequent fluctuation in consuming rates in the future.

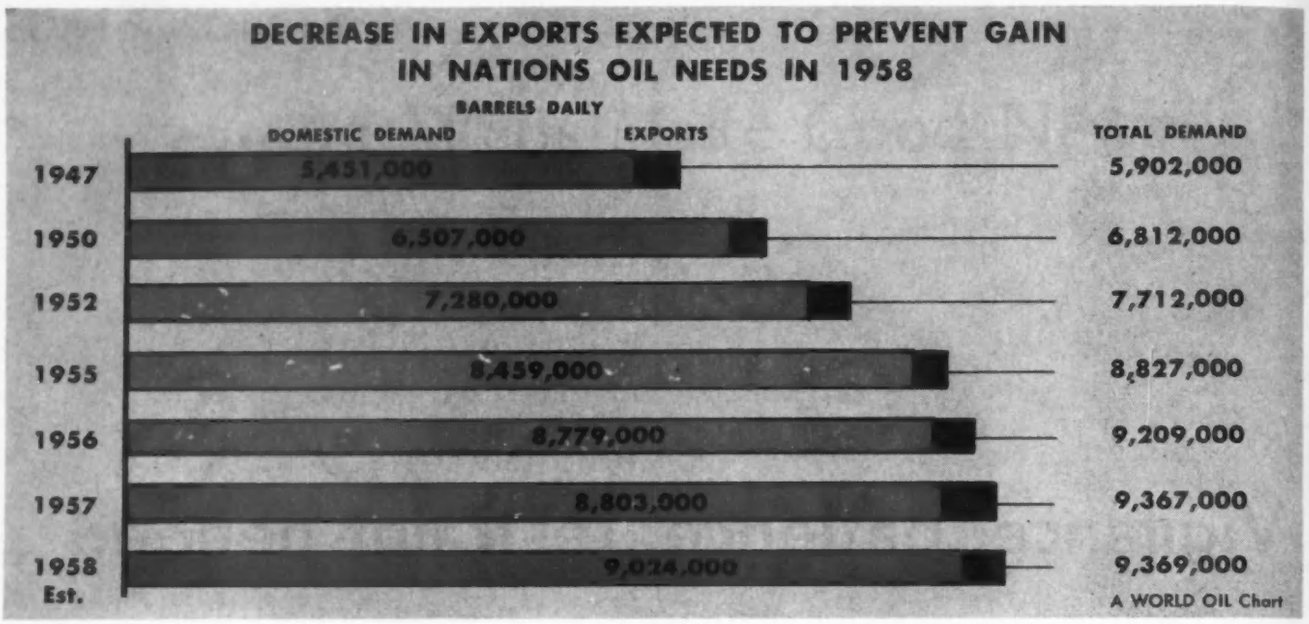
•

Present economic difficulties are the result of mounting supply in the face of a slower rate of growth in consumption. Oil has had these troubles before, but in a different form. In previous periods of over-production, excess supply has existed only in the U. S.

Today, substantial excess oil producing ability exists in all major producing areas of the world. Therefore, patience and restraint must be exercised in other areas of the world as well as in the U. S., until rising demand again creates a reasonable balance with supply.

Unfortunately, few other nations have oil conservation laws which restrict production to market requirements. Because the economy of many nations has become dependent on oil income since the war, the oil industry also is going to have to exercise statesmanship to satisfactorily explain to the governments of these countries why it is desirable to curtain producing rates.

Warren L. Baker

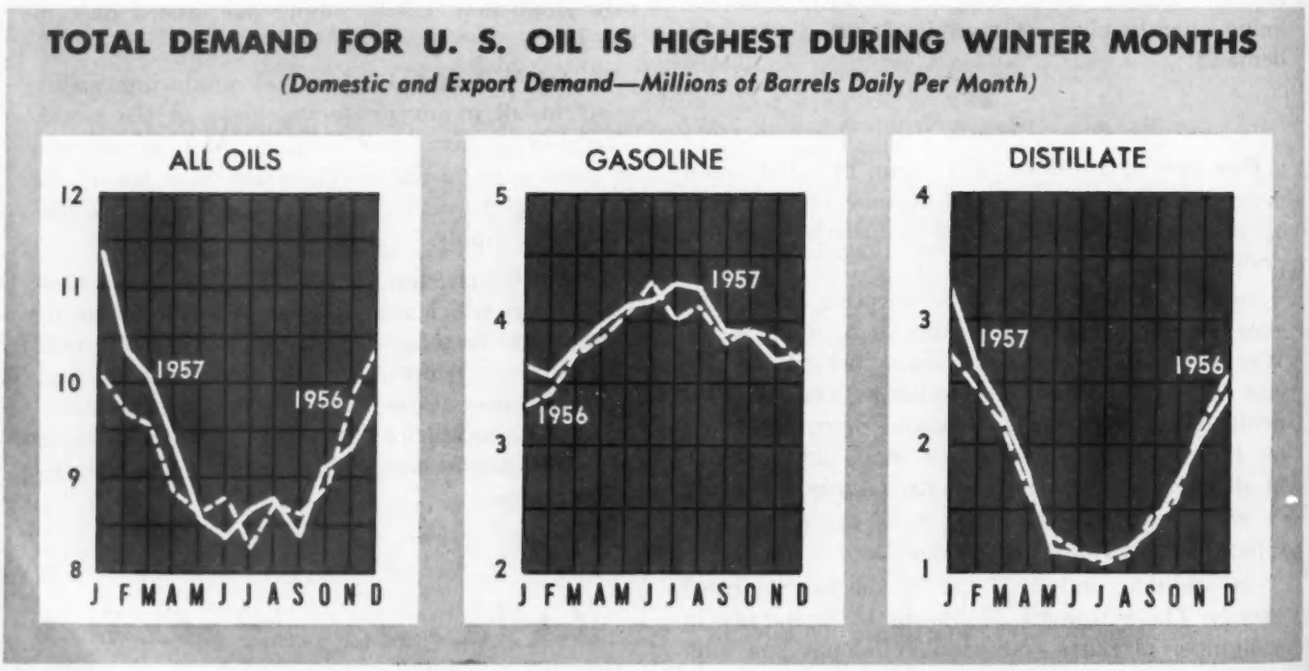


Lagging U. S. demand to require less supply

Because of lagging demand for petroleum products, oil industry operations cannot be expanded as usual in 1958. Total demand for all oils is expected to be virtually the same as in 1957. Crude runs to stills will need to be kept at the same daily average rate as in 1957, when they averaged 7,927,000 barrels daily.

There will not be need for either a net addition or net reduction of crude oil stocks. Total stocks of refined products need not be increased. On the contrary, they may safely be reduced several million barrels.

A balance of supply with demand may be achieved only by holding new supply down to a daily average 1.5



percent under that of 1957. Domestic production of natural gasoline and related products is not subject to proration and is expected to increase 1.9 percent to 824,000 barrels daily in 1958.

Assuming that crude oil imports will conform with the government's voluntary import control program, total imports in 1958 will average about 1,497,000 barrels daily. That would be a decrease of 29,000 barrels daily or 1.9 percent from 1957.

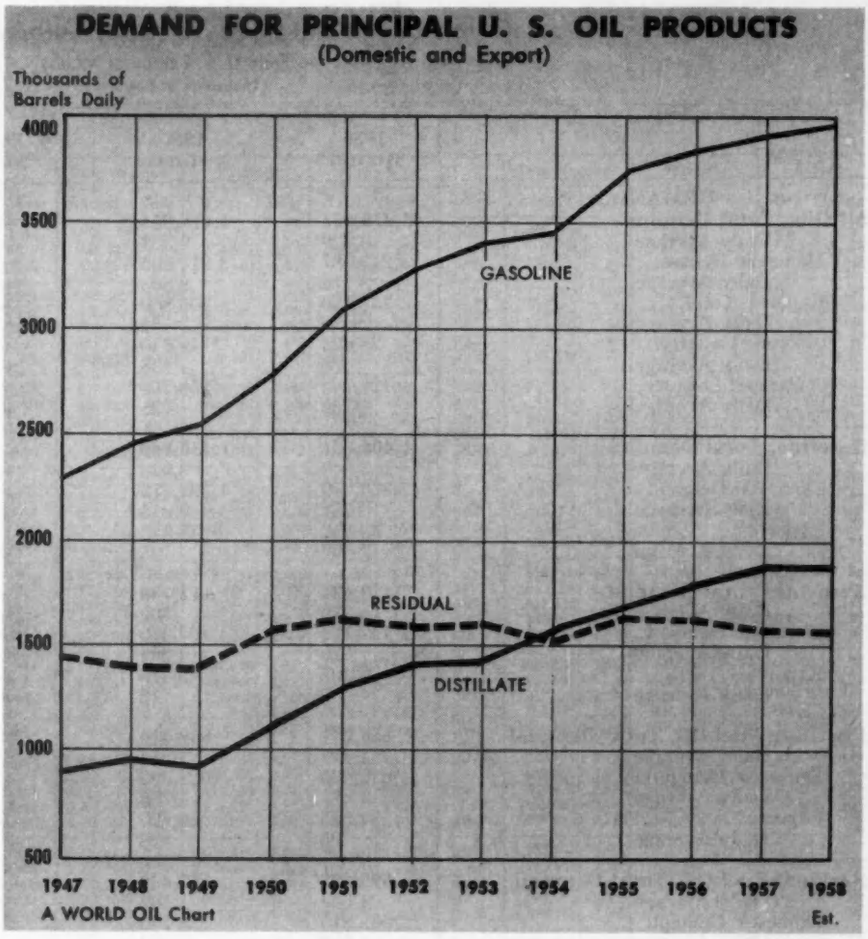
The above factors in demand and supply leave a need for domestic production of 7,037,000 barrels per day of crude oil in 1958. That would be 132,000 barrels a day or 1.9 percent less than the production of 7,169,000 barrels daily in 1957.

This outlook for petroleum industry operations in 1958 is indicated by the U. S. Bureau of Mines in its forecast of petroleum supply and demand for 1958.

Forecasts of Demand. Total demand for all oils in 1958 will average 9,369,000 barrels daily, the bureau estimated. That would be virtually the same as the 9,367,000 barrels per day of 1957. Even in 1957 the total demand failed to increase as much as usual. It was up only 158,000 barrels daily or 1.7 percent over the 9,209,000 daily of 1956. In other recent years, gains of 4 to 6 percent were customary.

While total demand was up 1.7 percent in 1957, that increase occurred largely through benefit of the large, emergency exports to Europe in the early months of that year. Exports dropped sharply after the end of the Suez crisis. But for the year they were still about 30 percent above 1956, with crude shipments up nearly 75 percent. Domestic demand, in contrast, showed practically no gain in 1957 over 1956.

In 1958 the trends of domestic consumption and exports will be the reverse of those in 1957. While total demand will be about the same in 1958 as in 1957, exports will be down nearly 40 percent, to a normal 345,000 barrels daily, with crude oil shipments down about 78 percent to only 30,000 barrels daily. But domestic



U. S. Petroleum Supply and Demand

(Source: U. S. Bureau of Mines.)

(THOUSANDS OF BARRELS DAILY)

	SUPPLY				DEMAND		
YEAR	U.S. Prod. All Oils[1]	Total Imports[2]	Total New Supply	Change in Stocks All Oils[3]	Domestic Demand[4]	Exports and Shipments[5]	Total Demand
1941.....	4,073	266	4,339	— 30	4,071	298	4,369
1942.....	4,034	99	4,133	—160	3,972	321	4,293
1943.....	4,372	174	4,546	— 33	4,168	411	4,579
1944.....	4,864	252	5,116	— 17	4,562	571	5,133
1945.....	5,010	311	5,321	— 37	4,857	501	5,358
1946.....	5,073	377	5,450	+119	4,912	419	5,331
1947.....	5,451	437	5,888	— 14	5,451	451	5,902
1948.....	5,921	514	6,435	+292	5,775	368	6,143
1949.....	5,477	645	6.122	— 8	5,803	327	6,130
1950.....	5,906	850	6,756	— 55	6,507	304	6,811
1951.....	6,720	844	7,564	+ 89	7,053	422	7,475
1952.....	6,868	952	7,820	+108	7,280	432	7,712
1953.....	7,113	1,034	8,147	+142	7,604	401	8,005
1954.....	7,035	1,052	8,087	— 29	7,760	355	8,115
1955.....	7,579	1,248	8,827	.....	8,459	368	8,827
1956.....	7,952	1,436	9,388	+179	8,779	430	9,209
1957.....	7,978	1,526	9,504	+137	8,803	564	9,367
1958 Est....	7,861	1,497	9,358	— 11	9,024	345	9,369

[1] Includes crude oil, natural gasoline, related products, and benzol. [2] Includes both refined and crude oil. [3] Includes changes in both refined and crude oil stocks. Minus signs indicate decreases and plus signs increases. [4] Includes military and civilian demand in continental United States and shipments to U.S. armed forces abroad. [5] Includes shipments to non-contiguous territories.

Forecast of Petroleum Demand and Supply in 1958, Compared with 1957 and 1956

(All Data From U. S. Bureau of Mines)

(Thousands of Barrels)

ITEM	1956 Actual	1957 Estimate	% Diff. '56-'57	1958 Forecast	% Diff. '57-'58
DEMAND					
All Oils, Total Demand	**3,370,573**	**3,418,955**	**+ 1.4**	**3,419,685**	.....
(Daily Average)	9,209	9,367	+ 1.7	9,369	.....
Domestic Demand	3,213,187	3,213,095	.....	3,293,760	+ 2.5
(Daily Average)	8,779	8,803	+ 0.3	9,024	+ 2.5
Exports, Total	157,386	205,860	+30.8	125,925	—38.8
(Daily Average)	430	564	+31.2	**345**	—38.8
Crude Exports	28,624	49,640	+73.4	**10,950**	—78.0
(Daily Average)	78	136	+74.4	**30**	—78.0
Refined Exports	128,762	156,220	+21.3	**114,975**	—26.4
(Daily Average)	352	428	+21.6	**315**	—26.4
Gasoline, Total Demand	**1,408,651**	**1,430,800**	**+ 1.6**	**1,456,350**	**+ 1.8**
(Daily Average)	3,849	3,920	+ 1.8	**3,990**	+ 1.8
Domestic Demand	1,373,079	1,392,475	+ 1.4	**1,423,500**	+ 2.2
(Daily Average)	3,752	3,815	+ 1.7	**3,900**	+ 2.2
Exports	35,572	38,325	+ 7.7	**32,850**	—14.3
(Daily Average)	97	105	+ 8.2	**90**	—14.3
Kerosine, Total Demand	**120,621**	**112,785**	**— 6.5**	**108,040**	**— 4.2**
(Daily Average)	329	309	— 6.1	**296**	— 4.2
Domestic Demand	117,324	107,310	— 8.5	**105,850**	— 1.4
(Daily Average)	320	294	— 8.1	**290**	— 1.4
Exports	3,297	5,475	+66.1	**2,190**	—60.0
(Daily Average)	9	15	+66.7	**6**	—60.0
Distillate Fuel Oil, Total Demand	**650,391**	**669,410**	**+ 2.9**	**670,505**	**+ 0.2**
(Daily Average)	1,777	1,834	+ 3.2	**1,837**	+ 0.2
Domestic Demand	615,856	622,690	+ 1.1	**644,955**	+ 3.6
(Daily Average)	1,682	1,706	+ 1.4	**1,767**	+ 3.6
Exports	34,535	46,720	+35.3	**25,550**	—45.3
(Daily Average)	95	128	+34.7	**70**	—45.3
Residual Fuel Oil, Total Demand	**590,690**	**577,430**	**— 2.3**	**571,590**	**— 1.0**
(Daily Average)	1,614	1,582	— 2.0	**1,566**	— 1.0
Domestic Demand	562,813	538,740	— 4.3	**544,580**	+ 1.1
(Daily Average)	1,538	1,476	— 4.0	**1,492**	+ 1.1
Exports	27,877	38,690	+38.8	**27,010**	—30.2
(Daily Average)	76	106	+39.5	**74**	—30.2
All Other Oils, Total Demand	**600,220**	**628,530**	**+ 4.7**	**613,200**	**— 2.4**
(Daily Average)	1,640	1,722	+ 5.0	**1,680**	— 2.4
Domestic Demand	544,115	551,880	+ 1.4	**574,875**	+ 4.2
(Daily Average)	1,487	1,512	+ 1.7	**1,575**	+ 4.2
Exports	56,105	76,650	+36.6	**38,325**	—50.0
(Daily Average)	153	210	+37.3	**105**	—50.0
CHANGE IN STOCKS					
All Oils	**+65,532**	**+50,005**	.....	**—4,015**	.....
(Daily Average)	+179	+137	.....	—11	.....
Crude Oil	+404	+10,950	.....	.....	.....
(Daily Average)	+1	+30	.....	.....	.....
Natural Gasoline	+6,995	.....	.....	.....	.....
(Daily Average)	+19	.....	.....	.....	.....
Refined Products	+58,133	+39,055	.....	**—4,015**	.....
(Daily Average)	+159	+107	.....	—11	.....
NEW SUPPLY					
Total New Supply	**3,436,105**	**3,468,960**	**+ 1.0**	**3,415,670**	**— 1.5**
(Daily Average)	9,388	9,504	+ 1.2	**9,358**	— 1.5
Domestic Production, Total	**2,910,514**	**2,911,970**	**+ 0.1**	**2,869,265**	**— 1.5**
(Daily Average)	7,952	7,978	+ 0.3	**7,861**	— 1.5
Crude Oil	2,617,283	2,616,685	.....	**2,568,505**	— 1.9
(Daily Average)	7,151	7,169	+ 0.3	**7,037**	— 1.9
Other Oils	293,231	295,285	+ 0.7	**300,760**	+ 1.9
(Daily Average)	801	809	+ 1.0	**824**	+ 1.9
Imports, Total	**525,591**	**556,990**	**+ 6.0**	**546,405**	**— 1.9**
(Daily Average)	1,436	1,526	+ 6.3	**1,497**	— 1.9
Crude Oil	341,833	362,080	+ 5.9	**361,350**	— 0.2
(Daily Average)	934	992	+ 6.2	**990**	— 0.2
Refined Products	183,758	194,910	+ 6.1	**185,055**	— 5.1
(Daily Average)	502	534	+ 6.4	**507**	— 5.1
Crude Oil Runs to Stills, Total	**2,905,106**	**2,893,355**	**— 0.4**	**2,893,355**	.....
(Daily Average)	7,937	7,927	— 0.1	**7,927**	.....

* Includes crude oil used as fuel and lost in handling, liquefied gases, petroleum coke, asphalt, road oil, etc., and refinery losses.

consumption, in contrast, will be up about 2.5 percent over 1957, as foreseen in the forecast. The domestic use will average 9,024,000 barrels daily, or 221,000 a day higher than in 1957.

Gasoline Demand To Rise. Total demand for gasoline, the industry's largest source of revenue, is forecast at 3,990,000 barrels daily in 1958, an increase of 70,000 barrels or 1.8 percent over 1957. Exports will be down somewhat, but domestic demand will be up 85,000 barrels daily or 2.2 percent. In 1957 total demand for gasoline was up 1.8 percent over 1956, with domestic consumption up 1.7 percent and exports up 8.2 percent.

Distillate fuel oil total demand in 1958 is estimated at 1,837,000 barrels daily, up 3000 barrels or 0.2 percent, with domestic demand due to rise 61,000 barrels or 3.6 percent, and exports to drop to 70,000 barrels daily from 128,000 in 1957 and 95,000 in 1956. In 1957 total demand for distillate was up 3.2 percent, with domestic use up 1.1 percent and exports up 34.7 percent.

Total demand for kerosine is estimated at 296,000 barrels daily in 1958, a decrease of 13,000 barrels daily or 4.2 percent from 1957. Domestic consumption is expected to be down only to 290,000 barrels daily in 1958 from 294,000 daily in 1957. But exports will drop to only 6000 barrels daily from 15,000 in 1957 and 9000 in 1956.

Need Extra Copies Of This Issue?

A limited number of extra copies of this issue were printed and may be obtained at $1 a copy. Send your order and remittance to:

WORLD OIL
P. O. Box 2608
Houston 1, Texas

Demand for All Oils and Gasoline, by Years

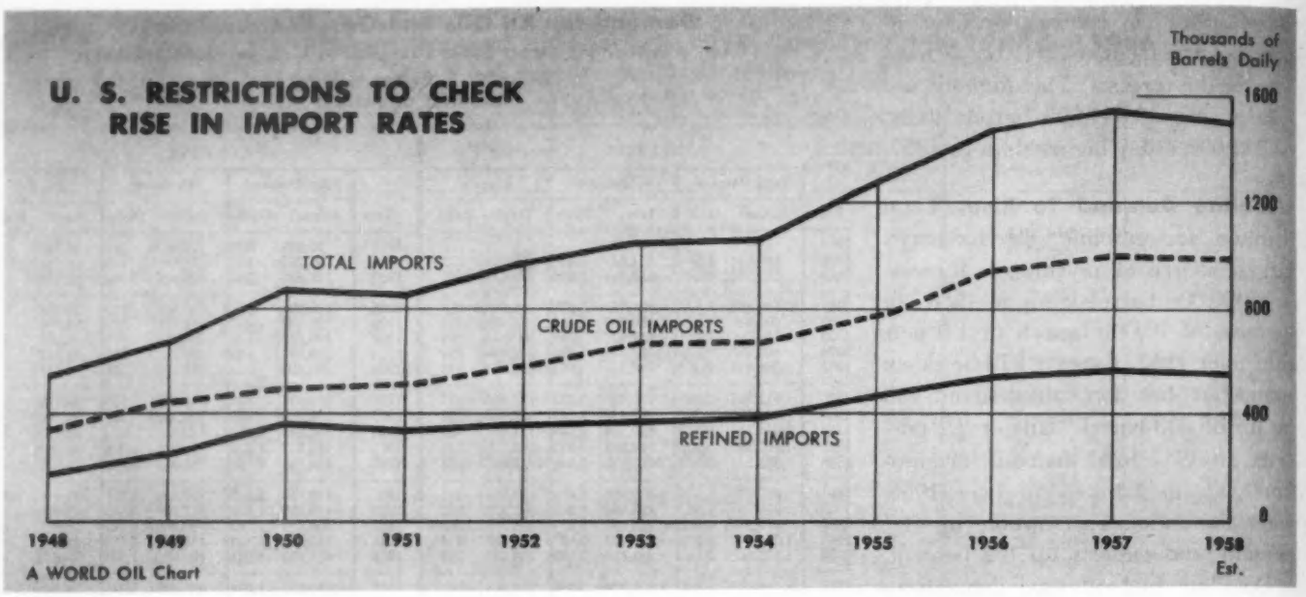
Total, domestic, and export demand supplied by U. S. petroleum industry.
(Source: U. S. Bureau of Mines.)
THOUSANDS OF BARRELS

	ALL OILS						GASOLINE					
	Total Demand		Domestic		Exports		Total Demand		Domestic		Exports	
Year	Annual	Daily	Total	Daily	Total	Daily	Annual	Daily	Total	Daily	Total	Daily
1918							93,599	256	79,949	219	13,650	37
1919	438,434	1,201	374,541	1,026	63,893	175	97,790	268	88,648	243	9,142	25
1920	535,382	1,463	456,764	1,245	79,618	217	124,623	340	108,945	298	15,678	43
1921	592,402	1,450	457,521	1,253	71,881	197	130,203	357	116,840	320	13,363	37
1922	605,540	1,659	530,990	1,455	74,550	204	152,132	417	137,770	377	14,362	39
1923	754,361	2,067	652,027	1,786	102,334	280	195,556	536	174,462	478	21,094	58
1924	805,070	2,120	687,742	1,879	117,328	321	225,737	617	196,586	537	29,151	80
1925	840,818	2,304	726,797	1,991	114,021	312	264,429	724	232,745	638	31,684	87
1926	912,893	2,501	780,487	2,138	132,406	363	311,897	854	268,128	735	43,769	120
1927	944,762	2,588	802,499	2,199	142,263	390	350,318	960	305,367	837	44,951	123
1928	1,014,716	2,772	859,759	2,349	154,957	423	392,293	1,072	338,881	926	53,412	146
1929	1,103,203	3,022	940,083	2,576	163,120	447	444,937	1,219	328,878	1,049	62,059	170
1930	1,083,511	2,968	927,016	2,540	156,495	429	463,184	1,269	397,609	1,089	65,575	180
1931	1,027,274	2,814	902,920	2,474	124,354	341	453,559	1,243	407,843	1,117	45,716	125
1932	938,757	2,565	835,482	2,283	103,275	282	413,229	1,129	377,791	1,032	35,438	97
1933	975,214	2,672	868,487	2,379	106,727	292	409,815	1,123	380,494	1,042	29,321	80
1934	1,034,672	2,835	920,165	2,521	114,507	314	435,025	1,192	410,339	1,124	24,686	68
1935	1,112,672	3,048	983,685	2,695	128,987	353	465,423	1,275	434,810	1,191	30,613	84
1936	1,224,748	3,346	1,092,754	2,986	131,994	361	510,252	1,394	481,606	1,316	28,646	78
1937	1,342,516	3,678	1,169,682	3,205	172,834	473	557,658	1,528	519,352	1,423	38,306	105
1938	1,330,850	3,646	1,137,122	3,115	193,728	531	573,112	1,570	523,003	1,433	50,109	137
1939	1,420,035	3,890	1,231,067	3,373	188,959	518	600,147	1,644	555,509	1,522	44,638	122
1940	1,457,086	3,981	1,326,620	3,625	130,466	356	614,867	1,680	589,490	1,611	25,377	69
1941	1,594,609	4,369	1,485,779	4,071	108,830	298	694,588	1,903	667,505	1,829	27,083	74
1942	1,566,815	4,293	1,449,908	3,972	116,907	320	624,207	1,710	589,110	1,614	35,097	96
1943	1,671,383	4,579	1,521,426	4,168	149,957	411	619,815	1,698	568,238	1,557	51,577	141
1944	1,878,979	5,134	1,671,263	4,566	207,616	567	733,019	2,003	632,482	1,728	100.537	275
1945	1,955,668	5,358	1,772,685	4,857	182,983	501	784,392	2,149	696,333	1,908	88,059	241
1946	1,945,909	5,331	1,792,786	4,912	153,123	419	780,751	2,139	735,417	2,015	45,334	124
1947	2,154,280	5,902	1,989,803	5,451	164,477	451	842,464	2,308	795,015	2,178	47,449	130
1948	2,218,352	6,143	2,113,678	5,775	134,674	368	908,572	2,482	871,270	2,380	37,302	102
1949	2,237,626	6,130	2,118,250	5,803	119,376	327	953,060	2,611	913,713	2,503	39,347	108
1950	2,486,363	6,812	2,375,057	6,507	111,306	305	1,019,011	2,792	994,290	2,724	24,721	68
1951	2,728,465	7,475	2,574,413	7,053	154,052	422	1,132,087	3,102	1,091,951	2,992	40,136	110
1952	2,822,595	7,712	2,664,407	7,280	158,188	432	1,193,565	3,261	1,157,280	3,162	36,285	99
1953	2,921,912	8,005	2,775,321	7,604	146,591	401	1,243,700	3,407	1,205,775	3,303	37,925	104
1954	2,962,157	8,115	2,832,424	7,760	129,733	355	1,264,961	3,466	1,230,595	3,371	34,366	94
1955	3,221,963	8,827	3,087,775	8,459	134,188	368	1,368,726	3,750	1,334,205	3,655	34,521	95
1956	3,370,573	9,209	3,213,187	8,779	157,386	430	1,408,651	3,849	1,373,079	3,752	35,572	97
1957	3,418,955	9,367	3,213,095	8,803	205,860	564	1,430,800	3,920	1,392,475	3,815	38,325	105
1958 Est.	3,419,685	9,369	3,293,760	9,024	125,925	345	1,456,350	3,990	1,423,500	3,900	32,850	90

Demand for Distillate Fuel and Residual Fuel Oil, by Years

Total, domestic and export demand supplied by U. S. petroleum industry
(Source: U. S. Bureau of Mines)
THOUSANDS OF BARRELS

	DISTILLATE						RESIDUAL					
	Total Demand		Domestic		Exports		Total Demand		Domestic		Exports	
Year	Annual	Daily	Total	Daily	Total	Daily	Annual	Daily	Total	Daily	Total	Daily
1932	73,883	202	65,101	178	8,782	24	250,268	684	239,056	653	11,212	31
1933	76,172	209	64,748	177	11,424	31	268,096	734	258,957	709	9,139	25
1934	89,330	245	74,824	205	14,506	40	279,646	766	265,547	727	14,099	39
1935	102,277	280	86,028	236	16,249	44	293,394	804	280,695	769	12,699	35
1936	123,205	337	102,757	281	20,448	56	322,319	881	307,884	841	14,435	39
1937	146,970	403	116,841	320	30,129	82	340,818	934	325,514	892	15,304	42
1938	147,090	403	117,449	322	29,641	81	309,753	849	291,833	799	17,920	49
1939	166,993	457	134,973	370	32,020	88	340,973	934	323,488	886	17,485	48
1940	179,991	492	160,851	439	19,140	52	356,272	973	340,163	929	16,109	44
1941	189,749	520	172,824	473	16,925	46	397,536	1,089	383,422	1,050	14,114	39
1942	207,236	568	185,661	509	21,575	59	417,792	1,145	405,697	1,111	12,095	33
1943	233,067	639	208,110	570	24,957	68	481,902	1,320	467,008	1,279	14,894	41
1944	252,811	691	209,320	572	43,491	119	524,556	1,433	512,020	1,399	12,536	34
1945	259,580	711	226,084	619	33,496	92	535,092	1,466	523,423	1,434	11,669	32
1946	272,381	746	242,894	665	29,487	81	489,217	1,340	480,029	1,315	9,188	25
1947	328,150	899	298,273	817	29,877	82	529,133	1,450	518,510	1,421	10,623	29
1948	361,869	989	340,576	930	21,293	58	513,554	1,403	500,543	1,368	13,011	35
1949	341,573	936	329,278	902	12,295	34	508,662	1,394	496,021	1,359	12,641	35
1950	407,538	1,117	394,885	1,082	12,653	35	570,021	1,562	553,793	1,517	16,228	44
1951	471,657	1,292	449,102	1,230	22,555	62	593,320	1,625	564,321	1,546	28,999	79
1952	512,862	1,405	479,347	1,310	33,515	92	582,866	1,593	555,165	1,517	27,701	76
1953	520,403	1,426	488,075	1,337	32,328	89	586,465	1,607	560,474	1,536	25,991	71
1954	550,570	1,508	526,347	1,442	24,223	66	549,070	1,504	522,317	1,431	26,753	73
1955	605,733	1,659	581,128	1,592	24,605	67	590,856	1,619	557,057	1,526	33,799	93
1956	650,391	1,777	615,856	1,682	34,535	95	590,690	1,614	562,813	1,538	27,877	76
1957	669,410	1,834	622,690	1,706	46,720	128	577,430	1,582	538,740	1,476	38,690	106
1958 Est.	670,505	1,837	644,955	1,767	25,550	70	571,590	1,566	544,580	1,492	27,010	74



Imports remain near peak despite curbs

DESPITE IMPOSITION of government restrictions, U. S. crude oil imports are likely to be at the same level in 1958 as in 1957. On the other hand, U. S. exports will be far smaller than last year because of heavy emergency shipments to Western Europe in 1957 when the Suez Canal was closed.

If U. S. crude oil imports approximate the government's voluntary restriction program, they will average 990,000 barrels per day in 1958, only 2,000 barrels less than the daily average in 1957. Due to the existence of surplus inventories of refined products, smaller quantities of products may be imported in 1958. The U. S. Bureau of Mines has forecast refined product imports of 507,000 barrels daily against 534,000 barrels per day in 1957. This means that total imports of crude and products are likely to average 1,497,000 barrels per day in 1958, or 29,000 barrels less than in 1957.

In contrast to the same change anticipated in import volumes, the Bureau of Mines predicts export shipments will drop 39 percent. Export shipments in 1957 averaged 564,000 barrels daily because of large scale shipments in early months of the year to Europe. However, they fell to normal levels by mid-year, and are expected to stay at these volumes. Consequently, export demand of only 345,000 barrels daily is forecast for 1958.

Imports fluctuated sharply last year. Crude imports rose from around 800,000 barrels daily in the first quarter to a new record of 1,257,000 barrels per day in August. Due to the government's restriction program, they fell to a low of 900,000 barrels daily in November.

Late in the year, a noticeable increase in crude oil imports on the

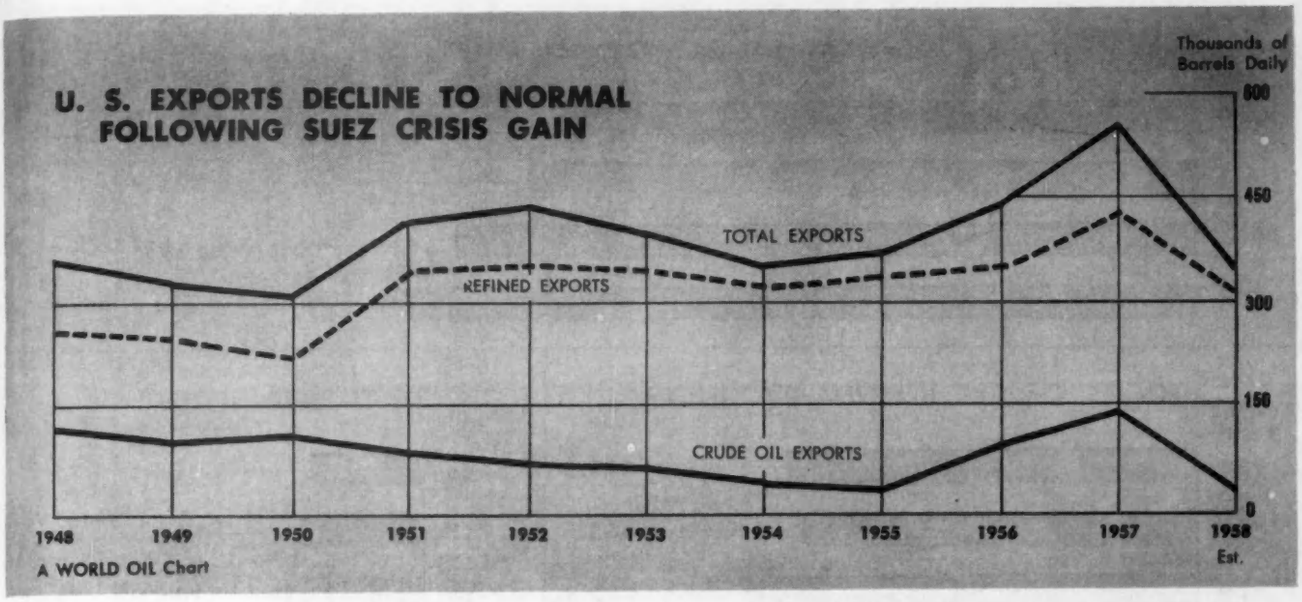
Excess of U. S. Oil Imports Over Exports, by Years

(Source: Bureau of Mines.)

(Thousands of Barrels Per Day)

	IMPORTS			EXPORTS			NET IMPORTS		
Year	Crude Oil	Products	Total	Crude Oil	Products	Total	Crude Oil	Products	Total
1946..	236	141	**377**	116	303	**419**	120	162*	**42***
1947..	267	169	**437**	127	325	**451**	140	155*	**14***
1948..	353	161	**514**	108	259	**367**	245	98*	**147**
1949..	421	224	**645**	91	236	**327**	330	12*	**318**
1950..	487	363	**850**	95	210	**305**	392	153	**545**
1951..	491	354	**844**	78	344	**422**	413	10	**422**
1952..	573	379	**952**	73	359	**432**	500	20	**520**
1953..	648	386	**1,034**	55	347	**402**	593	39	**632**
1954..	656	396	**1,052**	37	319	**356**	619	77	**696**
1955..	782	466	**1,248**	32	336	**368**	750	130	**880**
1956..	934	502	**1,436**	78	352	**430**	856	150	**1,006**
1957..	992	534	**1,526**	136	428	**564**	856	106	**962**
1958†.	990	507	**1,497**	30	315	**345**	960	192	**1,152**

* Net Exports. † Estimate.



West Coast led to government restrictions for that area as well as the previously covered other regions of the nation. This is expected to help stabilize U. S. supply conditions.

The import restriction program proved beneficial to the U. S. industry in 1957, the oil supply situation showing immediate improvement following its inauguration. Combined with curtailed domestic producing rates, lower imports permitted a reduction of more than 10 million barrels in crude oil stocks during the last four months of 1957.

The government's voluntary oil import program got off to a good start. If it continues working, it will constitute a broad step toward solving a problem which has become increasingly troublesome in recent years to domestic producers.

The program comes up for reevaluation next summer. The import picture could change for the better or the worse at that time. The problem of including potential new importers has yet to be resolved. This will become increasingly critical with the passage of time.

Need Extra Copies of This Issue?

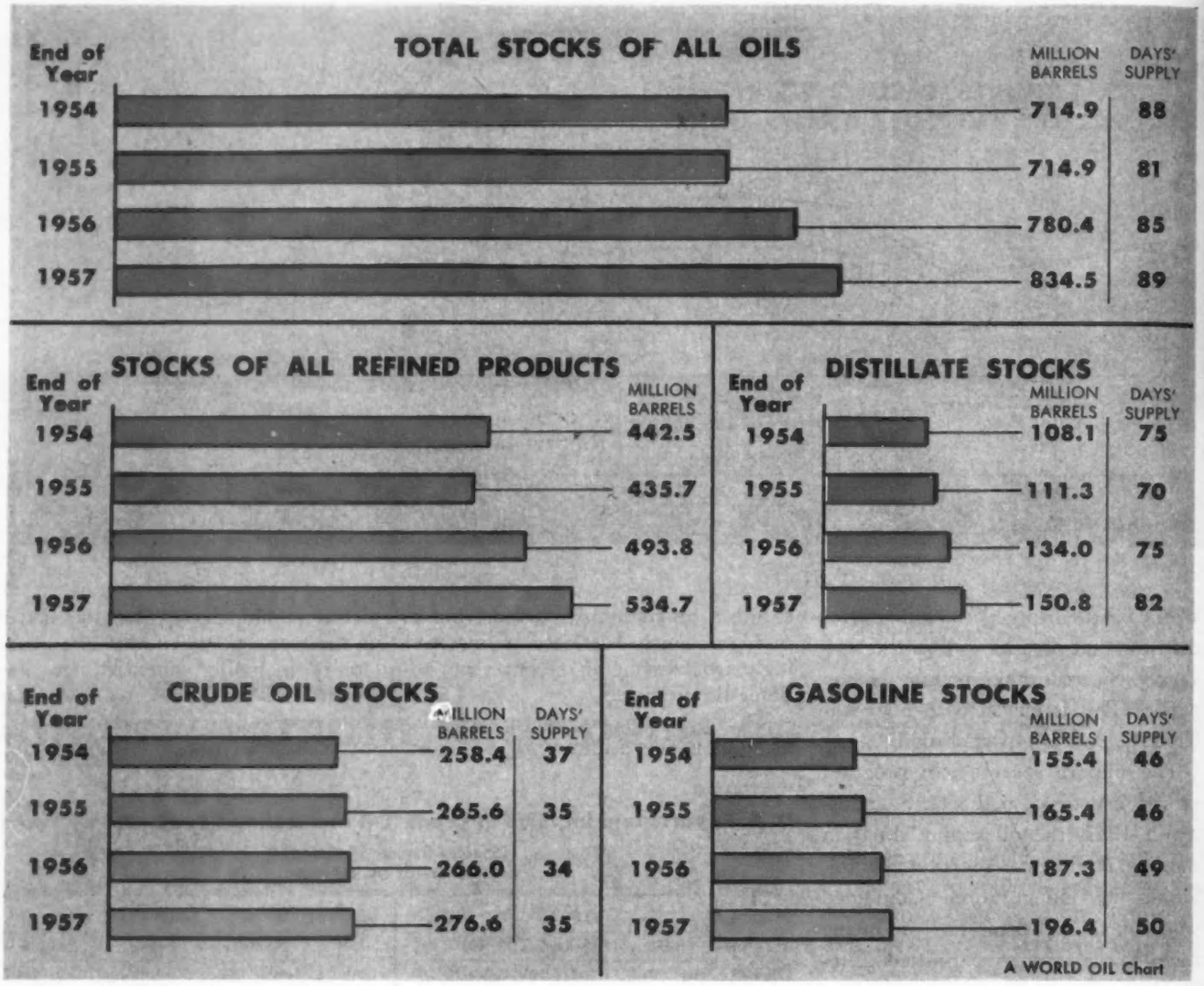
A limited number of extra copies of this issue were printed and may be obtained for $1 a copy. Send your order and remittance to:

WORLD OIL
P. O. Box 2608
Houston 1, Texas

U. S. Exports and Imports of Crude Oil and Refined Products, by Years

(Source: Bureau of Mines.)
THOUSANDS OF BARRELS

	EXPORTS							IMPORTS						
	Crude		Refined		All Oils			Crude		Refined		All Oils		
YEAR	Total	Daily	Total	Daily	Total	Daily	YEAR	Total	Daily	Total	Daily	Total	Daily
1918....	5,884	16	62,234	170	68,118	187	1918....	37,736	103	1,227	3	38,963	106
1919....	6,348	17	57,545	158	63,893	175	1919....	52,822	145	1,376	4	54,198	148
1920....	9,295	25	70,323	192	79,618	217	1920....	106,175	290	2,647	7	108,822	297
1921....	9,527	26	62,254	171	71,881	197	1921....	125,364	343	3,428	9	128,792	353
1922....	10,805	30	63,745	175	74,550	204	1922....	130,255	357	5,719	16	135,974	373
1923....	17,534	48	84,800	232	102,334	280	1923....	82,015	225	17,638	48	99,653	273
1924....	18,239	50	99,089	271	117,328	321	1924....	77,775	212	16,806	46	94,581	258
1925....	13,337	36	100,684	276	114,021	312	1925....	61,824	169	16,376	45	78,200	214
1926....	15,407	42	116,999	321	132,406	363	1926....	60,382	165	20,938	57	81,320	223
1927....	15,844	43	126,419	346	142,263	390	1927....	58,383	160	13,353	37	71,736	197
1928....	18,966	52	135,991	372	154,957	423	1928....	79,767	218	11,790	32	91,557	250
1929....	26,401	72	136,719	375	163,120	447	1929....	78,933	216	29,777	82	108,710	298
1930....	23,705	65	132,790	364	156,495	429	1930....	62,129	170	43,489	119	105,618	289
1931....	25,535	70	98,819	271	124,354	341	1931....	47,250	129	38,837	106	86,087	236
1932....	27,393	75	75,882	207	103,275	282	1932....	44,682	122	29,812	81	74,494	203
1933....	36,584	100	70,143	192	106,727	292	1933....	31,893	87	13,501	37	45,394	124
1934....	41,127	113	73,380	201	114,507	314	1934....	35,558	97	14,936	41	50,494	138
1935....	51,430	141	77,557	212	128,987	353	1935....	32,239	88	20,396	56	52,635	144
1936....	50,313	137	81,681	223	131,994	361	1936....	32,327	88	24,777	68	57,104	156
1937....	67,234	184	105,600	289	172,834	473	1937....	27,484	75	29,673	81	57,157	157
1938....	77,254	212	116,474	319	193,728	531	1938....	26,412	72	27,896	76	54,308	149
1939....	72,076	197	116,883	320	188,959	518	1939....	33,095	91	25,965	71	59,060	162
1940....	51,496	141	78,970	216	130,466	356	1940....	42,662	117	41,089	112	83,751	229
1941....	33,238	91	75,592	207	108,830	298	1941....	50,606	139	46,536	127	97,142	266
1942....	33,834	93	83,073	228	116,907	320	1942....	12,297	34	23,669	65	35,966	99
1943....	41,342	113	108,615	298	149,957	411	1943....	13,833	38	49,579	136	63,412	174
1944....	34,238	93	173,378	474	207,616	567	1944....	44,805	122	47,506	130	92,311	252
1945....	32,998	90	149,985	411	182,983	501	1945....	74,337	204	39,282	108	113,619	311
1946....	42,436	116	110,687	303	153,123	419	1946....	86,066	236	51,610	141	137,676	377
1947....	46,355	127	118,122	324	164,477	451	1947....	97,532	267	61,857	169	159,389	437
1948....	39,736	108	94,938	259	134,674	367	1948....	129,093	353	59,051	161	188,144	514
1949....	33,069	91	86,307	236	119,376	327	1949....	153,686	421	81,873	224	235,559	645
1950....	34,823	95	76,483	210	111,306	305	1950....	177,714	487	132,547	363	310,261	850
1951....	28,604	78	125,448	344	154,052	422	1951....	179,073	491	129,121	354	308,194	844
1952....	26,696	73	131,492	359	158,188	432	1952....	209,591	573	138,916	379	348,507	952
1953....	19,931	55	126,660	347	146,591	402	1953....	236,455	648	141,044	386	377,499	1,034
1954....	13,599	37	116,134	318	129,733	355	1954....	239,479	656	144,476	396	383,955	1,052
1955....	11,571	32	122,617	336	134,188	368	1955....	285,421	782	170,143	466	455,564	1,248
1956....	28,624	78	128,762	352	157,386	430	1956....	341,833	934	183,758	502	525,591	1,436
1957....	49,640	136	156,220	428	205,860	564	1957....	362,080	992	194,910	534	556,990	1,526
1958 Est.	10,950	30	114,975	315	125,925	345	1958 Est.	361,350	990	185,055	507	546,405	1,497



Stocks of oil reach all-time high

AT THE START of 1958, U. S. stocks of all oils were at an all-time high—834.5 million barrels. That was an increase of 54.1 million barrels or 6.9 percent higher than at the start of 1957.

With little or no increase in demand expected, the industry faces a serious problem in its efforts to decrease excessive stocks during 1958. Both refining and producing rates need to be carefully regulated. Otherwise, excessive stocks will cause serious economic problems.

In estimating 1958 demand for crude and refined products, the Bureau of Mines has recommended a net withdrawal of about 4 million barrels of refined products from storage in 1958. No decrease is expected in the 276.6 million barrels of crude stocks reported in storage at the beginning of 1958.

As background for the current oversupply situation, the following comparisons illustrate the rate at which crude and refined products have been increasing in recent years:

Crude. At the beginning of 1956, crude stocks totaled 265.6 million barrels. A year later, the inventories totaled 266 million barrels, or less than 1 percent higher than at the start of 1956.

However, crude stocks totaled 276.6 million barrels at the start of 1958, or 4 percent higher than at the start of 1957. Total increase in stocks over a two-year period: 11 million barrels, for a 4.1 percent increase.

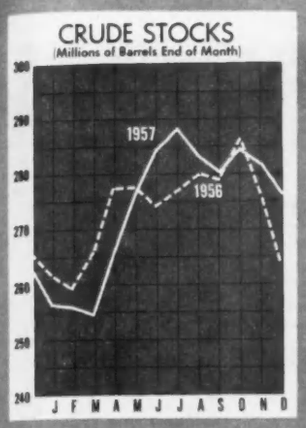
Gasoline. Inventories of gasoline have been increasing at a much more rapid rate than crude. At the beginning of 1956, gasoline stocks totaled 165.4 million barrels. A year later, inventories totaled 187.3 million barrels, for a 13.3 percent increase over the same period in 1956.

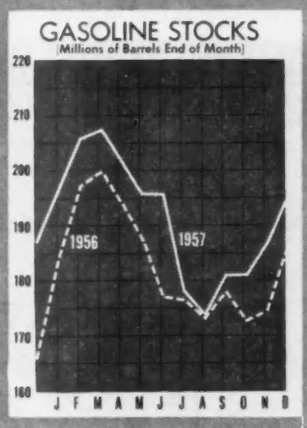
At the start of this year, gasoline inventories totaled 196.4 million barrels, nearly 5 percent higher than at the beginning of 1957. Total increase in stocks over a two-year period: 31 million barrels, for an 18.3 percent increase.

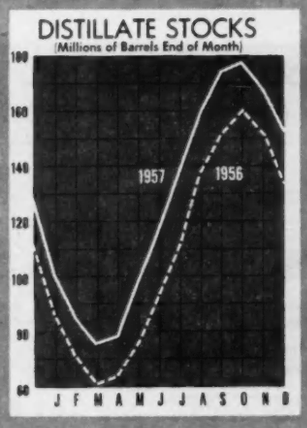
Distillates. At the beginning of 1958, distillate stocks totaled 150.8 million barrels, an increase of 16.8 million barrels or 12.5 percent higher than at the start of 1957.

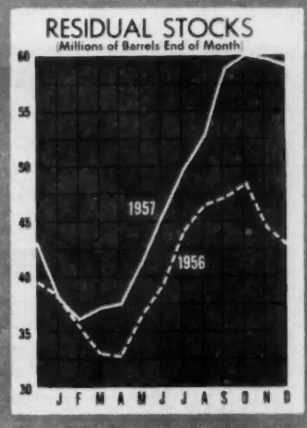
Continued on Page 105

U. S. PETROLEUM TRENDS BY MONTHS, 1957 AND 1956









Stocks of Major Petroleum Products Held by Refining Companies in U. S. at End of December, 1957, Compared with 1956

Stock at refineries, at bulk terminals, in transit and pipe lines. Data for 1956 from Bureau of Mines; for 1957 from weekly reports of American Petroleum Institute

(Thousands of Barrels)

DISTRICT	Finished and Unfinished Gasoline		Kerosene		Distillate Fuel Oil		Residual Fuel Oil	
	1956	1957	1956	1957	1956	1957	1956	1957
East Coast	40,225	44,330	12,979	12,902	51,634	59,637	12,594	12,566
Appalachian	7,494	7,850	1,089	1,099	4,208	4,376	645	1,181
District 1	4,844	5,025	649	599	3,251	3,125	365	717
District 2	2,650	2,825	440	500	957	1,251	280	464
Ind., Ill., Ky.	33,399	33,661	7,037	6,004	20,981	20,009	5,817	5,691
Minn., Wisc., N. & S. Dakota	7,291	7,144	1,270	1,119	7,831	7,308	387	407
Okla., Kans., Mo.	17,252	16,848	1,271	1,090	12,315	11,766	1,499	1,312
Inland Texas	7,439	7,552	620	443	1,917	1,970	1,947	2,067
Texas Gulf Coast	26,235	26,449	2,846	2,631	11,795	17,144	5,544	6,284
La. Gulf Coast	12,909	12,213	2,285	1,744	5,483	7,626	1,757	1,554
Ark., La. Inland	4,770	4,817	1,179	906	1,913	1,904	266	227
Rocky Mountains	6,333	6,813	440	345	2,819	2,994	956	1,039
District 3	378	450	20	12	109	122	78	96
District 4	5,955	6,363	420	333	2,710	2,872	878	943
California	23,924	28,700	304	331	13,085	16,035	13,079	26,986
Total, U.S.	187,271	196,377	31,420	28,614	133,981	150,769	44,491	59,314

Stocks of Crude Petroleum in U. S. by Grades, at End of Year

(Based on Weekly Reports of U. S. Bureau of Mines)

(THOUSANDS OF BARRELS)

GRADE or ORIGIN	Dec. 29 1956	Dec. 28 1957	Change
Pennsylvania Grade	2,397	3,039	+ 642
Other Appalachian	2,239	1,715	— 524
Lima-Michigan	773	870	+ 97
Illinois-Indiana	10,060	10,611	+ 551
Arkansas	2,880	2,776	— 114
Kansas	10,047	9,757	— 290
Nebraska and N. Dakota	2,095	2,437	+ 342
Louisiana	19,001	19,448	+ 447
Northern	3,085	2,801	— 284
Gulf Coast	15,916	16,647	+ 731
Mississippi	2,620	2,515	— 75
New Mexico	7,901	9,502	+ 1,601
Oklahoma	23,433	19,756	— 3,677
Texas	117,425	122,418	+ 4,993
East Texas	9,057	8,940	— 117
West Texas	54,224	55,255	+ 1,031
Gulf Coast	22,576	24,792	+ 2,216
Other Texas	31,568	33,431	+ 1,863
Panhandle	3,107	2,628	— 479
North	9,606	13,779	+ 4,173
South	4,036	7,191	+ 3,155
Other	14,819	9,833	— 4,986
Wyoming	16,637	13,641	— 2,996
Other Rocky Mountain	6,395	6,812	+ 417
California	28,170	34,986	+ 6,816
Foreign	12,168	15,930	+ 3,762
In California	2,941	5,619	+ 2,678
Other Foreign	9,227	10,311	+ 1,084
Total U.S.	264,241	276,233	+11,192

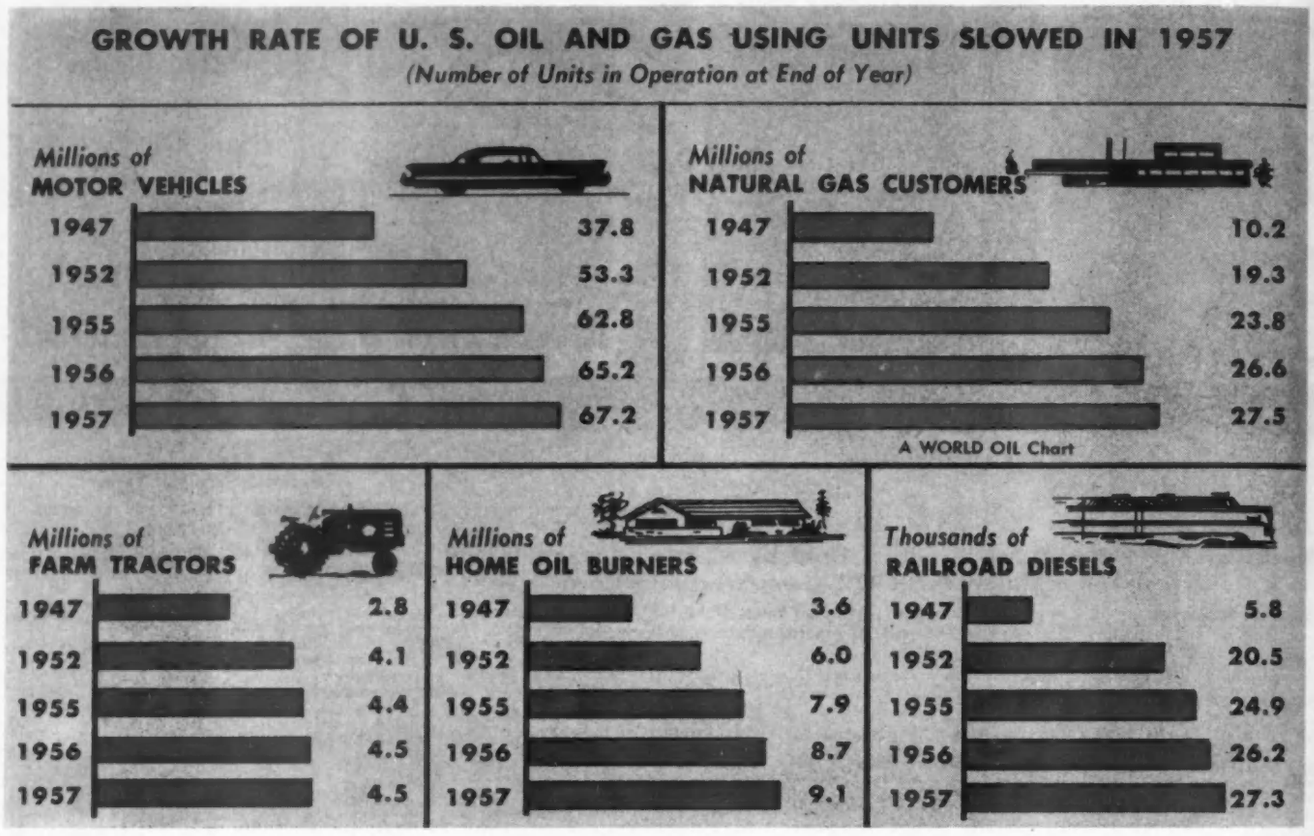
U. S. Stocks of All Oils, Crude Oil, Gasoline and Distillate

(Source: Bureau of Mines, except Dec., 1957, estimated . . . Thousands of Barrels)

END OF YEAR	ALL OILS		CRUDE OIL		GASOLINE		‡DISTILLATE	
	Barrels	Days' Supply	Barrels	Days' Supply	Barrels	Days' Supply	Barrels	Days' Supply
			Refinable		†Motor Fuel			
1918	193,411	165	144,336	125	7,080	28	.....	..
1919	200,383	164	149,356	127	10,638	40	.....	..
1920	209,845	156	149,448	103	11,009	32	.....	..
1921	294,428	203	217,324	150	13,954	39	.....	..
1922	385,349	232	295,708	181	21,043	50	.....	..
1923	492,088	235	340,637	169	25,593	48	.....	..
1924	520,287	236	360,475	171	30,823	50	.....	..
1925	552,464	239	345,863	150	39,273	54	.....	..
1926	527,084	210	315,029	133	39,521	46	.....	..
1927	597,176	231	379,660	155	34,115	36	.....	..
1928	621,010	224	392,629	148	33,742	31	.....	..
1929	689,166	228	428,445	149	42,498	35	.....	..
1930	665,497	224	411,882	153	54,192	43	.....	..
1931	621,673	221	370,194	144	56,171	45	.....	..
1932	590,106	230	339,875	145	53,805	48	.....	..
1933	602,198	226	354,223	140	55,933	50	17,025	..
1934	564,350	199	337,254	128	56,959	46	21,957	..
1935	541,700	178	314,855	109	60,391	47	19,930	71
1936	519,229	155	288,579	91	66,969	48	22,813	68
1937	564,728	154	305,833	87	81,748	54	22,566	56
1938	567,703	156	274,165	79	76,510	49	*36,224	*90

END OF YEAR	ALL OILS		CRUDE OIL		GASOLINE		‡DISTILLATE	
	Barrels	Days' Supply	Barrels	Days' Supply	Barrels	Days' Supply	Barrels	Days' Supply
1939	525,838	135	238,910	66	87,286	53	33,718	74
1940	563,277	141	264,079	70	83,647	50	42,940	87
1941	552,328	127	247,499	61	90,596	48	49,926	93
1942	497,940	116	234,889	61	75,404	44	44,940	75
1943	485,698	106	243,506	59	69,505	41	41,728	65
1944	477,089	95	220,862	46	78,073	39	38,333	55
1945	463,579	87	218,763	45	93,682	44	35,778	50
1946	507,094	95	224,473	45	89,515	42	59,620	80
1947	502,053	85	224,929	42	87,407	38	51,081	57
1948	607,856	99	246,572	43	101,060	41	76,001	77
			All Crude					
*1948	605,743	99	256,627	44	101,060	41	*71,429	*72
1949	603,119	98	253,356	46	110,417	42	75,207	80
1950	582,710	86	248,463	42	116,024	42	71,948	64
1951	634,109	85	255,783	39	*135,306	44	*86,619	67
					‡Gasoline			
1952	673,754	87	271,928	40	134,737	42	98,688	71
1953	725,507	91	274,445	39	157,872	46	111,741	78
1954	714,933	88	258,385	37	155,400	46	108,144	75
1955	714,859	81	265,610	35	165,433	46	111,333	70
1956	780,391	85	266,014	34	187,271	49	133,981	75
1957	834,521	89	276,561	35	196,377	50	150,769	82
1958 Est.	830,506	89	276,561	35	.....	....	.....	.....

* Revised; new basis. † Finished and natural gasoline. ‡ Finished and unfinished gasoline. ‡ Distillate and residual fuel oils included together prior to 1935.



Oil, gas using units at peak; smaller growth seen

A RECORD number of oil and gas consuming units were in operation as the U. S. entered 1958. While the number of homes, motor vehicles, farm tractors and railroad locomotives using oil and gas were at an all-time peak at the beginning of this year, the prospects were that future growth might be smaller than in past years.

Factors involved in governing this indicated leveling-off are a combination of economics and market saturation, including:

- Decline in rate of new-home construction.
- Slackening in sales of new automobiles.
- Large percentage of farms already have been mechanized.
- Railroads now have been largely dieselized.

The anticipated declining rate of new-home construction, of course, will reduce the needs for additional oil and natural gas using units.

The requirements for railroad diesels and mechanized farming equipment, having been largely filled, are expected to vary only with the needs for replacements, for the most part.

Motor Vehicles. The number of motor vehicles in the U. S. climbed to another record level—67.2 million—at the close of 1957. This represented an increase of 1.99 million from the 1956 end-of-year level of 65.21 million.

As an indication of approaching market saturation, as the number of motor vehicles registered in the U. S. increases, the rate of that increase is falling off. For example, the 1957 increase is in contrast with the 2.45 million rise reported in 1956 and the 9.5 million jump recorded in 1955.

Natural Gas Customers. While natural gas customers have increased in numbers sharply during the recent years, the rate of increase is being subjected to a significant downtrend.

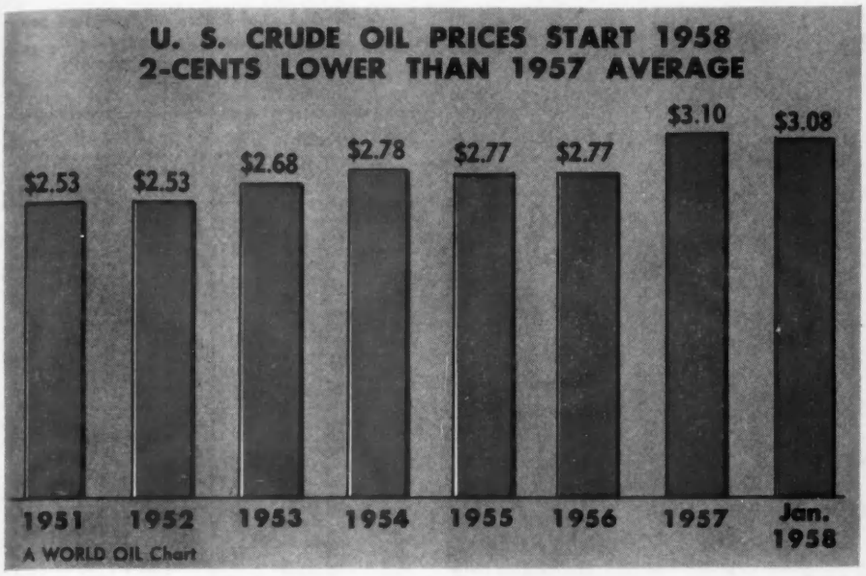
Although during the past 10 years the number of users has almost tripled, the increase in numbers at the end of 1957 amounted to 0.98 million, as compared with 1956, when the gain over 1955 was 2.77 million. The year 1955 showed a gain of 4.5 million customers from 1952.

Residential users make up the bulk of natural gas customers, and the decline in the U. S. home construction is expected to further affect the consumption expansion rate this year.

Farm Tractors. This category of oil and gas using units advanced to 4.55 million by the end of 1957. This amounted to an increase of only 50,000 from the previous year, while 1956 recorded an increase of 100,000. Ten years ago, there were but 2.82 million farm tractors in use.

Home Oil Burners. This type of oil using unit reached a new peak of 9.06 million at year's end, an increase of more than 300,000 recorded at the close of the previous year. This represented the smallest rate of growth in years.

Railroad Diesels. This type of locomotive also set a new record last year in reaching a level of 27,340, as compared to 26,210 at the end of 1956—a gain of 1,130. Ten years ago, there were only 5,770 railroad diesel locomotives in operation.



Crude oil prices dip slightly from 1957 level

THE REDUCED crude postings, which occurred late in 1957 and in January, 1958, have cut into the general price increases of from 25 to 40 cents per barrel which were posted in January, 1957. As a result, the average U. S. price per barrel of crude was 2 cents less than the 1957 average of $3.10.

Sporadic price cuts took place in various parts of the U. S. following the re-opening of the Suez Canal to loaded tanker traffic. Hardest hit was the South Texas Gulf Coast, where Magnolia, Continental, Humble, Sinclair, Southern Minerals Corporation and other firms made selective cuts of 10 cents per barrel.

U. S. Average Prices of Crude Oil at Wells
Source: Bureau of Mines except 1958 est.

YEAR	($ Per Bbl.)	YEAR	($ Per Bbl.)	YEAR	($ Per Bbl.)
1918	1.98	1931	.65	1946	1.41
1919	2.01	1932	.87	1947	1.93
1920	3.07	1933	.67	1948	2.60
		1934	1.00	1949	2.54
1921	1.73	1935	.97	1950	2.51
1922	1.61				
1923	1.34	1936	1.09	1951	2.53
1924	1.43	1937	1.18	1952	2.53
1925	1.68	1938	1.13	1953	2.68
		1939	1.02	1954	2.78
1926	1.88	1940	1.02	1955	2.77
1927	1.30				
1928	1.17	1941	1.14	1956	2.77
1929	1.27	1942	1.19	1957	3.10
1930	1.19	1943	1.20	1958 Jan.	3.08
		1944	1.21		
		1945	1.22		

Sohio Oil Company, followed by Ashland Refining Company and other firms, cut Illinois Basin postings by 15 cents early in December. The new price, $3.00 per barrel, was below the 1953 Illinois Basin price of $3.02.

In the Appalachian Basin, South Penn Oil Company reduced postings for Pennsylvania grade crude oils by 23 cents per barrel. The new prices varied from $4.65 to $4.00, depending on locality. The new postings appeared to be an adjustment owing to five price boosts in 1956 and another in January, 1957, representing a total advance during the 13-month period of $1.03.

Generally lagging demand due to reduced industrial activity made the outlook for improvement in the crude price structure rather dim in 1958. However, limitations on imports restricted U. S. production, and cold January weather gave rise to hopes that the weak price structures had corrected themselves.

One factor will play a major part in determining price stability: The extent to which oil companies comply with the government's voluntary imports program.

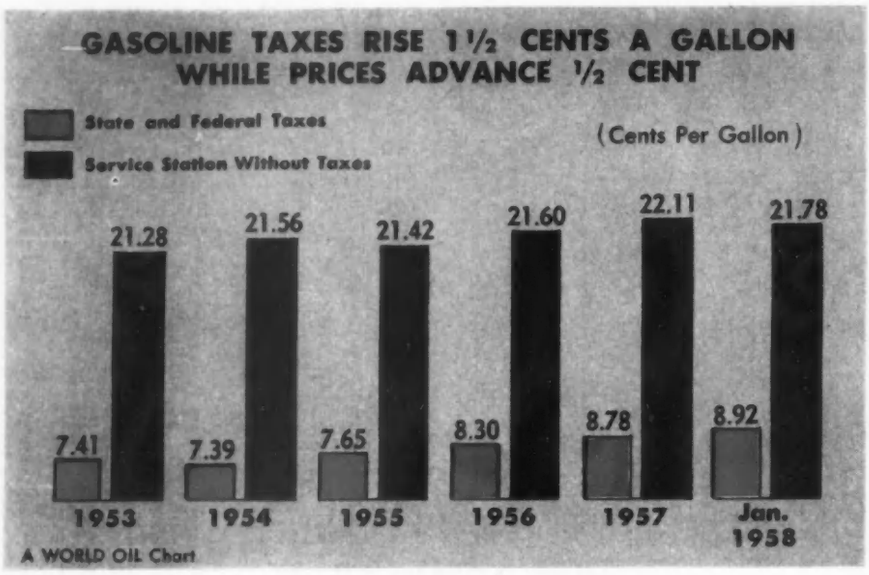
Crude Price Changes in Mid-Continent, California, and West Texas, by Years
(Dollars Per Barrel)

DATE	Okla., Kans. 36-36.9° Gravity	Calif., Long Beach 27-27.9°	West Texas Sour 30-30.9°
1937: Prior to Jan. 1	$1.10	$1.10	$0.78
January 28	1.22	....	0.88
1938: October 12	1.02	....	0.75
1939: No Changes	....	....	....
1940: February 1	....	1.03	....
1941: March 29	....	....	0.82
April 1	1.07	....	....
April 24	....	1.09	....
May 20	1.17	....	....
May 21	....	....	0.92
May 23	....	1.15	....
1942: Feb. 3; frozen at Oct. 1, 1941 level	1.17	1.15	0.92
1943 1944; 1945: No Changes; prices frozen	....	....	....
1946: April 1: OPA Raise	1.27	1.25	1.02
July 25: Oil Prices decontrolled	1.52	....	1.27
August 1	....	1.50	....
November 15	1.62	....	....
November 19	....	....	1.37
1947: March 10	1.87	....	1.62
March 19	....	1.75	....
July 1	....	1.95	....
October 15	2.07	....	....
October 16	....	....	1.82
December 6	2.57	....	2.32
December 27	....	2.45	....
1948: No Change	....	....	....
1949: June 1	....	2.37	....
1950: December 12	....	2.41	....
1951: Frozen at Jan. 25 level	2.57	2.41	2.32
1952: No Changes; frozen	....	....	....
1953: Feb. 16: decontrolled	....	2.76	....
June 15	2.82	....	2.57
1954: No Change	....	....	....
1955: No Change	....	....	....
1956: November 21	....	2.92	....
1957: January 3	3.07	....	2.82
January 17	....	3.17	....
1958: No Change	....	....	....

Changes in Prices of Bradford, Pennsylvania, Crude, by Years
(Dollars Per Barrel)

Date	Price	Date	Price	Date	Price
1937:		1942:		1950:	
Before		[1]Feb. 3	$2.75	May 1	$3.65
Jan. 1	$2.15	[2]Mar. 26	3.00	June 21	3.75
Feb. 24	2.67			July 19	3.89
June 7	2.82	[3]1943:		Aug. 25	4.00
Sept. 1	2.60			Oct. 9	4.10
Oct. 12	2.35	[3]1944:		Dec. 9	4.25
Dec. 1	2.20				
		[3]1945:		[6]1951:	
1938:					
Mar. 7	2.05	1946:		[6]1952:	
June 13	1.80	[4]April 1	3.10		
Sept. 1	1.68	[5]Aug. 1	3.35	1953:	
		Sept. 1	3.41	Feb. 16	4.40
1939:		Dec. 9	3.55	Aug. 1	4.55
Jan. 21	1.80			Sept. 21	4.05
Feb. 1	1.88	1947:			
Mar. 6	2.00	Jan. 1	3.65	1954:	
Oct. 6	2.25	Mar. 1	3.81	Jan. 1	3.76
Nov. 1	2.40	April 1	3.91	May 20	3.26
Dec. 1	2.50	May 16	4.05	Sept. 1	3.23
		July 1	4.30	Dec. 1	3.35
1940:		Sept. 1	4.50		
Jan 1	2.75	Dec. 1	5.00	1955:	
May 22	2.50			Jan. 21	3.50
June 18	2.25	1948:		July 11	3.60
July 12	2.00	Dec. 11	4.50	Nov. 1	3.75
Aug. 18	1.85			Dec. 1	3.85
Nov. 12	2.00	1949:			
Dec. 17	2.15	Jan. 21	4.00	1956:	
		Mar. 11	3.75	Feb. 6	4.00
1941:		April 1	3.55	Mar. 16	4.20
Jan. 27	2.30	April 13	3.40	May 16	4.45
April 23	2.40	May 11	3.27	July 16	4.57
May 20	2.55	June 16	3.54	Aug. 16	4.68
June 18	2.75	Dec. 12	3.40		
Aug. 14	2.98		3.54	1957:	
Aug. 23	2.75			Jan. 16	4.88
				July 26	4.65

[1] Frozen at Oct. 1, 1941 level. [2] Penn. grade raise granted. [3] No change; price frozen. [4] Raise granted by OPA. [5] Oil prices decontrolled July 25, 1946. [6] No change; price frozen at Jan. 25, 1951, level.



Gasoline prices weakened

EXCESSIVE STOCKS continue to weaken retail gasoline prices, but the same cannot be said for taxes. January, 1958, state and federal gasoline taxes were 0.14 cents per gallon higher than the 1957 average, while service station prices excluding taxes were 0.33 cents lower.

Since 1950, gasoline taxes have increased 72 percent, and now average 5.92 cents per gallon in the U. S. On the other hand, retail gasoline prices, exclusive of taxes, have increased only 8.5 percent.

In view of large inventories and prospects for less than normal growth, gasoline prices are not expected to increase in 1958.

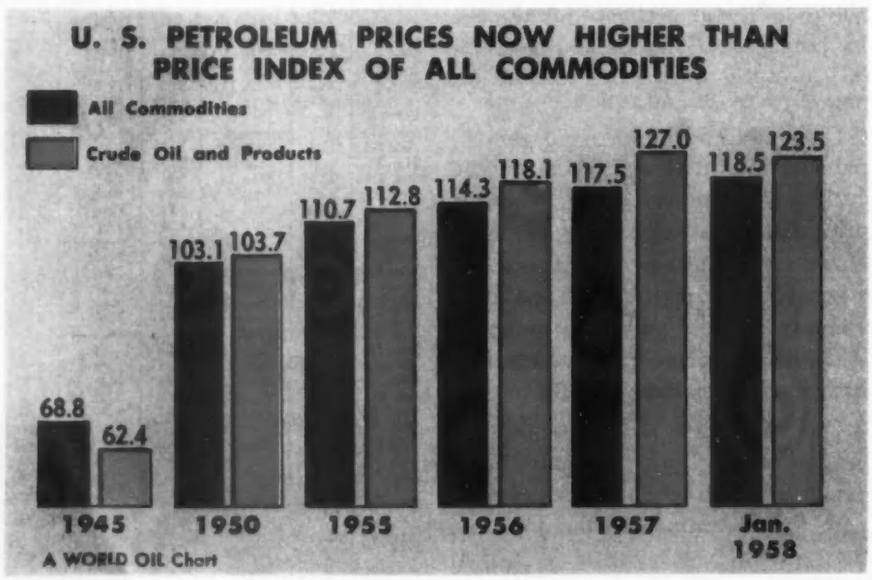
U. S. Average Prices of Gasoline in 50 Cities, by Years
Source: The Texas Co., via API.
Cents per Gallon

YEAR	Dealer's Net	Service Sta. Excl. Tax	State and Local Tax	Federal Tax	Service Sta. Incl. Tax
1918	....	25.12	0.00	....	25.12
1919	....	25.41	0.06	....	25.47
1920	....	29.74	0.09	....	29.83
1921	....	26.11	0.20	....	26.31
1922	....	24.82	0.38	....	25.20
1923	....	21.06	0.91	....	21.97
1924	....	19.46	1.48	....	20.94
1925	....	20.09	2.11	....	22.20
1926	17.44	20.97	2.41	....	23.38
1927	15.00	18.29	2.80	....	21.09
1928	14.83	17.90	3.04	....	20.94
1929	14.58	17.92	3.50	....	21.42
1930	12.48	16.17	3.78	....	19.95
1931	9.65	12.98	4.00	....	16.98
1932	10.08	13.30	4.13	0.50	17.93
1933	9.42	12.41	4.16	1.25	17.82
1934	9.81	13.64	4.21	1.00	18.85
1935	9.73	13.55	4.29	1.00	18.84
1936	10.21	14.10	4.35	1.00	19.45
1937	10.53	14.59	4.40	1.00	19.99
1938	10.04	14.07	4.44	1.00	19.51
1939	9.58	13.31	4.44	1.00	18.75
1940	9.08	12.75	4.41	1.25	18.41
1941	9.49	13.30	4.43	1.50	19.23
1942	10.44	14.46	4.47	1.50	20.43
1943	10.45	14.56	4.47	1.50	20.53
1944	10.49	14.62	4.47	1.50	20.59
1945	10.33	14.48	4.52	1.50	20.50
1946	10.40	14.69	4.58	1.50	20.77
1947	12.33	16.93	4.68	1.50	23.11
1948	14.55	19.54	4.84	1.50	25.88
1949	15.05	20.27	5.02	1.50	26.79
1950	15.10	20.08	5.18	1.50	26.76
1951	15.33	20.31	5.25	1.59	27.15
1952	15.27	20.24	5.32	2.00	27.56
1953	15.95	21.28	5.41	2.00	28.69
1954	16.19	21.56	5.39	2.00	28.95
1955	16.18	21.42	5.65	2.00	29.07
1956	16.33	21.60	5.80	2.50	29.90
1957 Est.	16.69	22.11	5.78	3.00	30.96
1958 Jan.	16.43	21.78	5.92	3.00	30.70

Oil price index drops as others rise

RECENT REDUCTIONS in the prices of crude and products resulted in a decrease in their wholesale price index late in January, 1958, compared with the 1957 average—while the price index for all commodities continued its five-year upward trend.

In January, the price index for crude and products was 123.5 percent of the 1947-49 average, a drop of 3.5 percent from the 1957 average of 127. The crude oil price index was down 0.5 percent.



Index of Wholesale Prices
(All Commodities vs. Crude Petroleum and Petroleum Products.)
Source: U. S. Bureau of Labor Statistics.
1947-1949 = 100

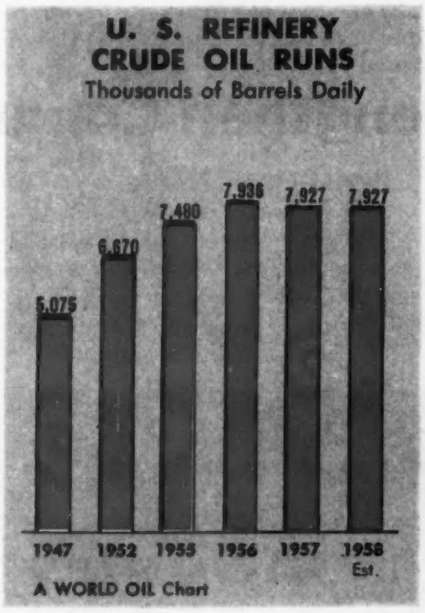
Year	All Commodities	Crude Oil & Products	Year	All Commodities	Crude Oil	Pet. Products	Crude Oil & Products
1926	65.0	98.1	....	....	....	....	....
1927	62.0	71.3	1947	96.4	81.6	89.6	88.2
1928	62.9	70.6	1948	104.4	109.9	112.1	111.7
1929	61.9	69.9	1949	99.2	108.5	98.3	100.1
1930	56.1	60.4	1950	103.1	108.4	102.8	103.7
1931	47.4	38.7	1951	114.8	109.0	110.1	110.5
1932	42.1	44.5	1952	111.6	109.0	109.2	109.3
1933	42.8	40.2	1953	110.0	117.0	111.9	112.7
1934	48.7	49.5	1954	110.3	120.3	109.4	110.8
1935	52.0	50.3	1955	110.7	120.5	111.2	112.8
1936	52.5	56.2	1956	114.3	121.1	117.5	118.1
1937	56.1	59.3	1957	....	....	....	....
1938	51.1	54.9	Est.	117.5	133.5	126.7	127.0
1939	50.1	51.3	1958	....	....	....	....
1940	51.1	49.1	Jan.	118.5	133.0	123.0	123.5
1941	56.8	56.0	....	....	....	....	....
1942	64.2	58.7	....	....	....	....	....
1943	67.0	61.4	....	....	....	....	....
1944	67.6	62.7	....	....	....	....	....
1945	68.8	62.4	....	....	....	....	....
1946	78.7	66.3	....	....	....	....	....

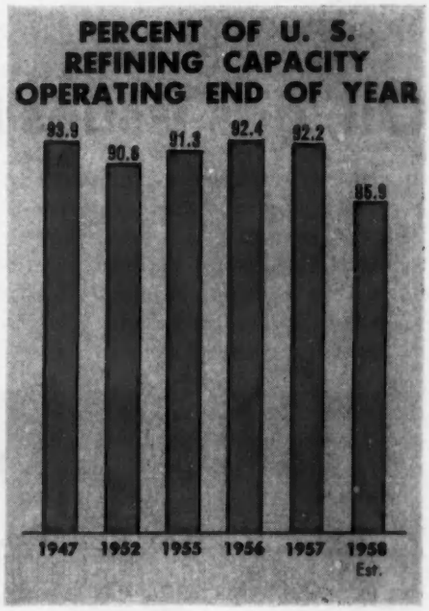
U. S. Crude Runs to Stills, by Years

Source: Bureau of Mines, except Nov.-Dec., 1957 from API.

(THOUSANDS OF BARRELS)

Year	Total	Daily	Year	Total	Daily
1918...	326,025	893	1938.	1,165 015	3,192
1919...	361,520	990	1939.	1,237,840	3,391
1920...	433,915	1,186	1940.	1,294,283	3,536
1921...	443,363	1,215	1941.	1,409,192	3,861
1922...	500,706	1,372	1942.	1,334,103	4,655
1923...	581,238	1,592	1943.	1,429,738	3,917
1924...	643,719	1,759	1944.	1,665,684	4,551
1925...	739,920	2,027	1945.	1,719,534	4,711
1926...	779,264	2,135	1946.	1,730,197	4,740
1927...	828,835	2,271	1947.	1,852,246	5,075
1928...	913,295	2,295	1948.	2,048,349	5,597
1929...	987,708	2,706	1949.	5,944,221	5,327
1930...	927,447	2,541	1950.	2,094,867	5,739
1931...	894,608	2,451	1951.	2,370,404	6,494
1932...	819,997	2,240	1952.	2,441,259	6,670
1933...	861,254	2,360	1953.	2,554,865	7,000
1934...	895,636	2,454	1954.	2,539,564	6,958
1935...	965,790	2,646	1955	2,730,218	7,480
1936- .	1,068,570	2,919	1956	2,905,106	7,937
1937 .	1,183,440	3,242	1957	2,893,355	7,927
			1958 Est.	2,893,355	7,927





Refinery crude runs should not increase

U. S. REFINERY crude runs to stills will show no increase during 1056, according to U. S. Bureau of Mines estimates.

With the expectation that there will be no increase in the demand for U. S. oils during 1958, and the need to reduce excessive product inventories, it is desirable that crude runs to refineries be held to 7.9 million barrels daily, the same as last year.

The major problem in 1958 will be the same as 1957—excessive product stocks. Limitation of refinery runs to last year's level should permit some reduction in stocks if demand remains the same as last year. On the other hand, higher crude runs would aggravate the current oversupply of refined product inventories.

Even though 1957 refinery runs were down 3.3 million barrels (9000 barrels per day) from the previous year, refiners have started the new year with product stocks totaling 534.6 million barrels, up nearly 41 million barrels (112,000 barrels per day) over the same period in 1956. The industry's economic position would have been greatly improved if 1957 crude runs had been cut at least 90,000 barrels per day.

Refinery runs of 7.9 million barrels daily mean the operation of a smaller percent of U. S. refining capacity. The API predicts that expansion and new construction will boost U. S. capacity 220,000 barrels per day.

U. S. Crude Runs to Stills and Refining Capacity, by Districts

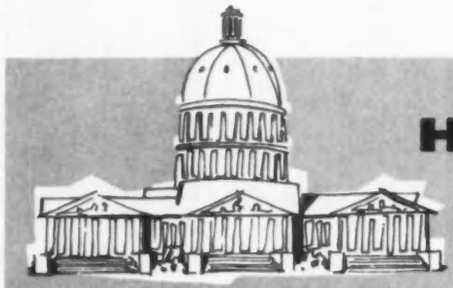
Runs from Bureau of Mines, except Nov.-Dec., 1957, from API; capacities from API

(Thousands of Barrels)

	DAILY CAPACITY AND USE IN DECEMBER						CRUDE RUN DURING YEAR				
	Capacity		Runs		Percent Operated		Total Amount		Daily Average		
REFINING DISTRICT	1956	1957	1956	1957	1956	1957	1956	1957	1956	1957	% Diff.
East Coast	1,322	1,337	1200.2	1181.7	90.8	88.4	412,173	435,362	1,126	1,193	+ 6.0
Appalachian Dist. 1	109	109	103.4	108.8	94.9	99.8	37,112	37,238	101	102	+ 1.0
Appalachian Dist. 2	104	101	107.6	105.3	103.5	104.3	37,151	34,310	102	94	— 7.9
Ill., Ind., Ky.	1,548	1,580	1,481.3	1,412.8	95.7	89.4	514,406	504,905	1,405	1,383	— 1.6
Minn., Wisc., N.D., S.D.	98	110	96.5	105.6	98.5	96.0	31,453	34,718	86	95	+10.5
Okla., Kans., Mo.	732	756	694.0	728.9	94.8	96.4	250,778	256,523	685	703	+ 2.6
Texas Inland	302	309	279.5	259.1	92.5	83.9	99,419	98,217	272	269	— 1.1
Texas Gulf Coast	2,100	2,126	1,949.0	1,805.5	92.8	84.9	716,417	688,504	1,947	1,886	— 3.6.
Louisiana Gulf Coast	756	778	678.8	608.4	89.8	78.2	254,700	237,225	696	650	— 6.6
Ark., and La. Inland	108	122	103.0	98.4	95.4	80.7	34,245	33,426	94	92	— 2.1
New Mexico	27	30	26.5	26.7	98.1	89.0	8,742	9,775	24	27	+12.5
Other Rocky Mountain	295	311	266.7	261.6	90.4	84.1	98,196	100,139	268	274	+ 2.2
California	1,324	1,415	1,154.2	1,100.6	87.2	77.8	410,314	420,435	1,121	1,152	+ 2.8
Total U.S.	8,825	9,084	8,140.7	7,803.4	92.2	85.9	2,905,106	2,890,777	7,937	7,920	— 0.2

* Data for new district not available for 1956.

Oil, gas issues lengthen Congress' '58 agenda



How will the Industry fare in Congress in '58?

NATURAL GAS BILL

Whether bill passes is a toss-up . . . defeat possible unless Congressional leaders push for bill.

IMPORTS

Voluntary curbs on imports appear to be working out. Look for program to face sternest test later this year.

TAXES

Ways and Means Committee is looking for new sources of revenue . . . but depletion allowance appears safe for the time being.

TIDELANDS

Over-all issue taking a back seat this session . . . claims of individual states due for airing.

PUBLIC LANDS

Interest increasing in development of Alaskan lands for oil and gas . . . bill to clear issue now in Senate subcommittee.

PIPE LINES

There may be general legislation on consent decrees. For present, any disputes go to appropriate courts.

INTERNATIONAL OIL

Congressmen are still talking about how U. S. would meet another Suez crisis.

ATOMIC ENERGY

What will Congress or A.E.C. do about increasing use of radioactive materials ? . . no action in sight that will directly affect oil companies.

By Ira P. Bradford
Ira P. Bradford and Associates
Washington, D. C.

A NEW SESSION of Congress opened on January 7 amidst much concern over preparedness and its cost to the American people. Congressional comment gave some assurance that a bipartisan attitude would prevail on matters relating to the safety of the nation. But, since this is an election year, the politicians are bound to play politics, certainly with many of the domestic issues.

In the field of domestic problems the oil industry will be faced with several legislative proposals which are not new; such as the amendment to the natural gas act, imports controls, depletion, tidelands, public lands administration, pipe line and marketing and other related issues. However, all of these things must be considered in the light of changing conditions and personalities. For example, today we have a squeeze between high costs and weak prices existing between the production and the marketing levels. Therefore, any legislative proposals must be revaluated under current conditions.

Natural Gas Bill. While it is likely that the demand for oil will hold about even with 1957, there seems no doubt that the demand for natural gas will steadily increase. Clarification of the law through the passage of the Harris-Fulbright bill is felt by many to be the best way to release venture capital to find new gas reserves. Whether the bill can pass in this session of Congress is a toss-up, with the emphasis on defeat unless a concerted effort by the leadership on both sides of the House pushes for the bill as it now stands.

Oren Harris as chairman of the Interstate and Foreign Commerce com-

mittee has said that he cannot go along with the two amendments introduced by Representative Harley Staggers of West Virginia. Those two amendments are intended to afford protection to the coal industry. In addition to the stumbling block presented by the coal interests, there is the recent decision in the so-called Memphis case, which holds that gas pipe lines must get acceptance of the higher rates from all customers before petitioning the Federal Power Commission for approval. Any attempt to correct that decision by amendment to the Harris bill simply raises another complication touching upon the consumer interest.

Imports. The results so far of the operation of the voluntary imports quotas, under the administration of Captain Matthew V. Carson, have been so satisfactory that there seems to be little need at this time to fear mandatory controls. The program has been acclaimed by leading independent producers as well as others. However, some dissatisfaction has been expressed with the scope of the program. Because fuel oil and other products are not included in the program, coal producers feel they are not being protected, and are seeking tariffs or compulsory controls to keep the oil business at a disadvantage.

The strength of the voluntary program may be tested later in the year, when the pressure of large new discoveries of cheap foreign crude in the Western Hemisphere really begins to make itself felt in the depressed products market price-wise in the U. S. All in all, the voluntary imports control plan now that it applies all the way across the country, provides the industry with an opportunity to demonstrate some economic statesmanship in solving their mutual problems at home and abroad.

As to the renewal of the Reciprocal Trade legislation, it is a fact that the President will ask for a five-year extension. The mood of Congress seems in favor of granting three years as a generous compromise. It is well known that many southern members of Congress have much pressure from back home to get rid of the Reciprocal Trade Agreements Act, which they say poses a threat to the economic security of the South. Their idea of a compromise is a one-year extension.

Taxes. Taxes of all kinds are under study by the powerful Ways and Means Committee of the House, in an effort to discover loopholes, inequities and means of simplifying the regulations. The need for new sources of revenue to meet the needs of increased defense development led some to believe that the depletion allowance was in for a sharp reduction to all enjoying this benefit. Now, on the strength of statements made by the new chairman of the committee, Wilbur Mills, Democrat of Arkansas, it seems certain that depletion, at least in so far as it applies to domestic resources, will not be a subject for change in this Congress.

No doubt depletion will be brought up and discussed in its application to foreign resources. More is apt to be said in the Senate along these lines. Actually, if the depletion allowance is to help cushion the risk of finding oil as well as being a means of partially reimbursing the producer for irreplaceable capital assets, some impartial observers see no difference in making it apply abroad as well as at home. Some senators do not see the parallel.

Tidelands. Tidelands does not appear to be an issue before this session of Congress. The Supreme Court of the U. S. will consider the arguments of all interested parties, namely the states with offshore claims, and seek to make a determination of their historical boundaries. Pending that determination, it is almost certain there will be no legislation introduced going to the substance of the issue. However, there is some talk that Senator Hill, Democrat of Alabama, may bring up his "oil for the lamps of learning" bill which, of course, goes into the use of the funds received by the federal government from the lands seaward of the historic state boundaries.

Public Lands. The development of Alaskan lands for oil and gas has been of ever increasing interest, especially since the rich oil strike made in the Kenai Moose Range. A bill, H. R. 8054, has passed the House and now lies in a Senate Interior subcommittee, headed by Senator Jackson, Democrat of Washington. That bill seeks to resolve a problem which prevents drilling for oil and gas on Alaskan submerged lands. This arises from the fact that neither the territory of Alaska nor the federal government has any power to lease the lands for oil and gas drilling. The territory lacks the power because it does not have title to the lands, which are held by the federal government. The federal government lacks the power because it holds the lands in trust for the future state of Alaska, and cannot permit the development of the oil and gas for the benefit of the people of Alaska unless Congress authorizes it.

H. R. 8054 proposes to solve that problem without harm to the fish and wildlife preserves. At the present time Secretary Seaton has in force an edict shutting down all exploration activity in the Kenai Moose Range. He has announced in December when approving new oil and gas regulations for leasing on federal wildlife lands, "these regulations now make it clear that final authority to approve leasing in fish and wildlife areas is vested solely in the Secretary." The order suspending exploration activity was made in compliance with Section B, 3 of the new regulations, which provides: "As to range lands and Alaska wild life areas, representatives of the appropriate office of the Bureau of Land Management and the U. S. Fish and Wildlife Service will confer for the purpose of entering into an agreement specifying those lands which shall not be subject to oil and gas leasing. No such agreement shall become effective, however, until approved by the Secretary of the Interior. As to coordination lands, representatives of the Bureau of Land Management and U. S. Fish and Wildlife Service will, in cooperation with the authorized members of the various state game commissions, confer for the purpose of determining by agreement those lands which shall not be subject to oil and gas leasing."

No provision is made to have industry representatives present at these conferences. Industry spokesmen believe this to be a mistake and are endeavoring to convince the Secretary that the public interest would best be served by their presence.

It is interesting to note that the citizens of Anchorage, Alaska, are not worried about the inroads of private enterprise. The Chamber of Commerce of Anchorage, in a brochure entitled, "Alaska's 1957 Oil Discovery and It's Strategic Importance," contends that oil in Alaska is too impor-

tant to allow production to be delayed or limited by any special interest group and that the development of oil would not harm the moose on the Kenai Moose Range. They say further that though more exploration and drilling must be done before the capacity of the Moose Range can be ascertained, optimistic forecasts are that the 2 million acres of that range could produce oil in excess of the present production of Iran.

Pipe Lines. In October several pipe line officials appeared before a subcommittee of the House Judiciary committee. Chairman Cellar, Democrat of New York, had called them in as part of his investigation into the consent decrees granted by the Department of Justice, and specifically, regarding administration of the Elkins decree of 1941, pertaining to the pipe line industry.

So far, as a result of the hearings, the Interstate Commerce Commision has modified its procedure to eliminate the need for company representatives to be present at the commission during review of the companies' operations under the decree. The Commission also has modified its procedure by severing association in any way with the American Petroleum Institute. Hereafter, the Commission will ask pipe line industry members as individuals to advise on a committee whose chairman will be a member of the I.C.C.

Otherwise no rule changes or proposed legislation have been made public. Legislation directed at any specific industry is not anticipated. There may be general legislation on the subject of consent decrees. Beyond that, any dispute arising from differing interpretations of the 1941 consent decree would be settled in the courts having appropriate jurisdiction. Until Chairman Cellar releases a report of his committee's findings and recommendations, no one can be sure of the reaction of the Department of Justice or of the effect the report might have on the continuing investigation that is said to be still under way at the F.B.I.

International Oil. Since the Suez crisis, many economic readjustments have had to be made quickly, there have been Congressional hearings and expressions from other forums as to the best way to meet another crisis of this kind should it arise again. The Senate Judiciary subcommittee, headed by Senator O'Mahoney, Democrat of Wyoming, held rather lengthy discussions on the subject with officials of the participating companies as well as representatives of the executive branch of the government. The committee did not issue a report because it was said they could not agree on any point. However, the committee staff issued a report on their own initiative and so got their findings aired publicly anyway.

Shortly after William P. Rogers took office as attorney general, Senator O'Mahoney wrote him a letter advising him of the committee's interest in any international oil agreements and emphasizing the importance of reviewing with the committee any consent decree agreements that might come under consideration in the Department of Justice with the international oil companies.

It is well known that talks have been going on between the Department of Justice and oil company spokesmen, and that as of this date no finalized agreement has been reached. There is no evidence, according to sources on the hill, that the attorney general has ever replied to Senator O'Mahoney's letter. If any finalized agreement is reached between the Department and the oil industry, it is a certainty that the Congress will endeavor to give it a thorough review.

Atomic Energy. The increasing use of radioactive materials in the oil industry brings up the question as to what, if anything, the Congress or the Atomic Energy Commission may do to facilitate or hinder such activity. At the present time there is nothing before the responsible committees of Congress in the way of legislation which would affect oil companies engaged in the exploration for or the production of unanium. However, the Atomic Energy Commission did place an amendment before the joint Atomic Energy Committee of Congress. That amendment is designed to broaden the authority of the Commission to license nuclear materials for certain industrial uses. The amendment was submitted late in the last season, so was not acted upon then. It should receive favorable consideration this year. It is understood that the use referred to would be in the U. S. only, since under the law only the A.E.C. can transport materials to foreign countries, and that must be handled on a government to government basis, thus eliminating individual companies as receivers of nuclear materials outside the U. S.

Other Problems. In the marketing field Congress will again see an effort on the part of some retailer groups to stir up interest in support of H. R. 11 and S. 11, both bills designed to overcome court decisions upholding so called "good faith pricing." S. 11 was bottled up in the Senate Judiciary Committee last session and never did see the light of day in the House Judiciary Committee. What will happen this session pretty much depends upon what decision the Supreme Court hands down as a result of a rehearing of the Standard Oil Co. vs. The F.T.C. after 18 years in the courts. Congress seems content to wait for the decision if for no better reason than to avoid going on record for or against the bill.

Also under possible scrutiny by Congress may be dealer relations and practices with suppliers, and possibly a study of government aid to dealers as small businessmen by Senator Hubert Humphrey, Democrat of Minnesota, of the Senate Select Committee on Small Business. —**The End**

About the Author

Ira P. Bradford opened his office in Washington, D. C., as a consultant on industry problems at the first of this year. Until then he had been with Standard Oil Company (Indiana) for over 20 years. He has worked in most phases of marketing, serving as manager of personnel for pipe lines, assistant to the vice president of production and for the last eight years Washington representative reporting to the vice president and general counsel of the company. Bradford is a graduate of Georgetown Law School, 1935. He attended the advanced management course offered at the Harvard Business School in 1950.

ACCURATE

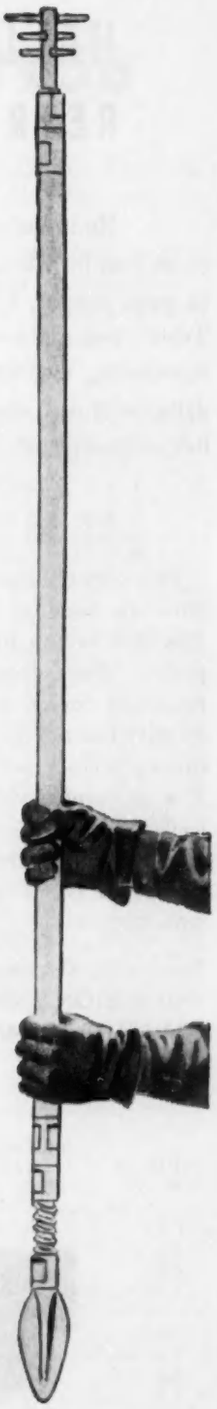
With a Totco Recorder you have simplicity of operation, sustained accuracy in recording, and durability. What's more, these famous instruments are constantly being modified and improved. You can depend on your Totco even in the deepest, hottest wells. . . . Be sure you know, use Totco!

RUGGED

Shock . . . pressure . . . heat—none of these affect the accuracy of your durable Totco Recorder. Constantly modified and improved, Totco Recorders are built to take it! No wonder more Totco instruments are now in use than any other make. . . . Be sure you know, use Totco!

SERVICE

Service by Totco and by Lucey Export has many features . . . assurance of dependable and sustained performance . . . guarantee that all parts are perfect . . . pledge that when replacements are required, shipments will be made without delays, by air if necessary . . .



TOTCO

With Totco and Lucey you can be sure!

EXCLUSIVE EXPORT DISTRIBUTOR

LUCEY

LUCEY EXPORT CORPORATION

233 BROADWAY, NEW YORK 7, N. Y.

pretecca, urbanizacion sucre, maracaibo, venezuela • calle defensa 320, buenos aires, argentina • broad street house, london e.c.2, england • rua do carmo 27-7°, rio de janeiro, brazil • calgary and edmonton, alberta, canada • west building, houston, texas •

Testing Time Saver...

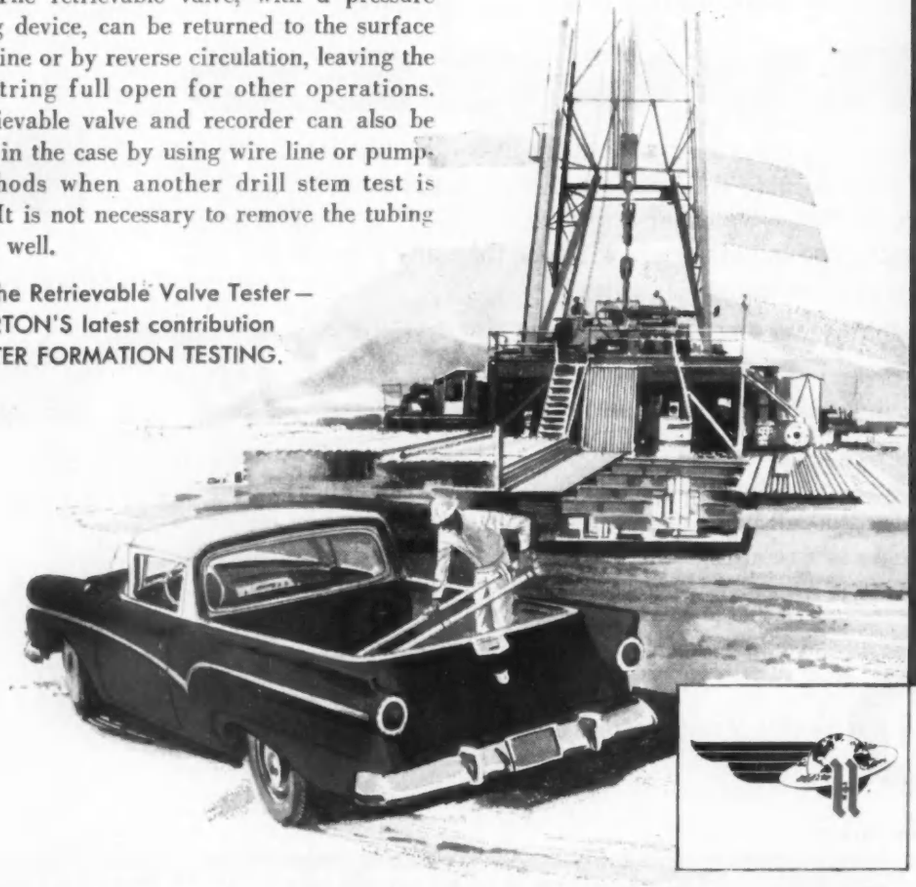
HALLIBURTON'S ONE TRIP
RETRIEVABLE VALVE TESTER

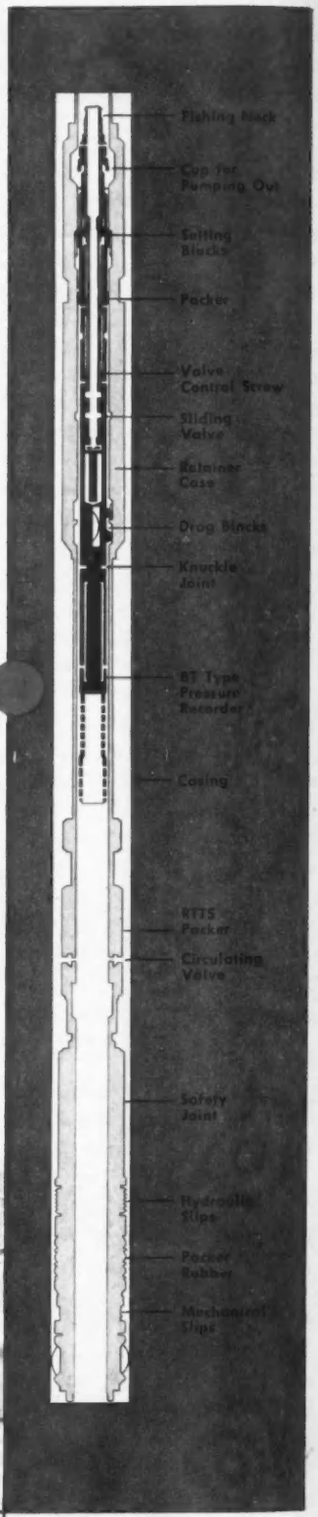
Reduced rig time during well evaluation and completion operations results when you include Halliburton's Retrievable Valve Tester in your string. Used above the RTTS Packer, the Retrievable Valve Tester permits several operations such as drill stem testing, cement squeezing, treating, perforating and simultaneous gamma-collar logging without the usual time-consuming round trips with tubing between operations.

30 SECOND TECHNICAL DESCRIPTION

This versatile testing tool consists of two assemblies—the retainer case and the retrievable valve. The case is run in the tubing string with the packer. The retrievable valve, with a pressure recording device, can be returned to the surface by wire line or by reverse circulation, leaving the tubing string full open for other operations. The retrievable valve and recorder can also be replaced in the case by using wire line or pumping methods when another drill stem test is desired. It is not necessary to remove the tubing from the well.

Specify the Retrievable Valve Tester—HALLIBURTON'S latest contribution FOR BETTER FORMATION TESTING.





RETAINER CASE & RETRIEVABLE VALVE TESTER

HALLIBURTON OIL WELL CEMENTING COMPANY DUNCAN, OKLAHOMA

TESTING SERVICES

HALLIBURTON—SETS THE PACE IN DRILL STEM TESTING

Wildcat drilling expected to drop in 1958

U. S. WILDCATTING activity this year is expected to decrease 7.1 percent from 1957. According to WORLD OIL estimates, 10,574 wildcats will be drilled during this year. This would be equivalent to 809 fewer wildcats than were completed last year.

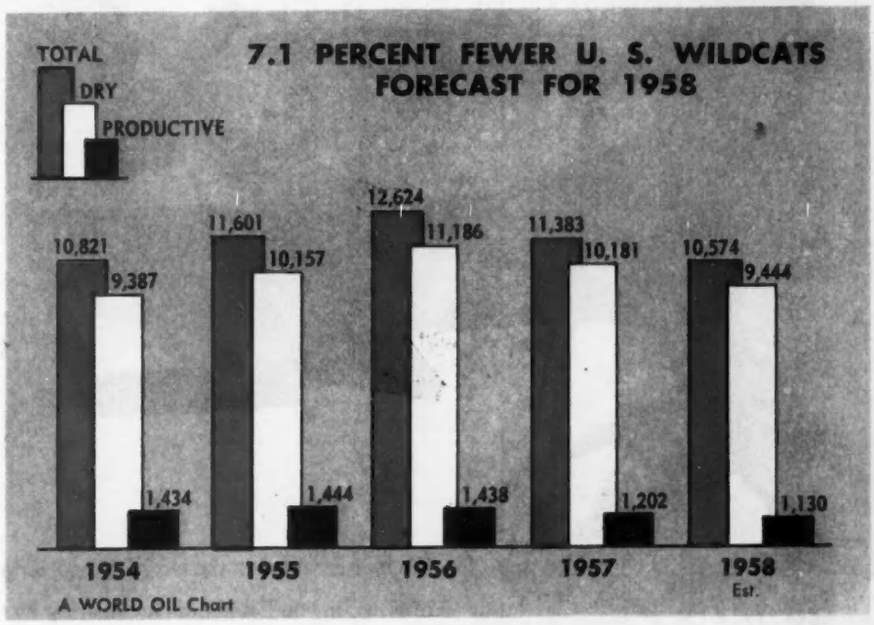
This predicted decline follows an abrupt reduction in total U. S. drilling activity during 1957. Last year, total wildcat drilling activity reflected a drop of 1,241 completions as compared to 1956, when the total was 12,624 wildcats.

Factors responsible for the anticipated decrease in wildcat drilling this year, just as in other phases of the U. S. drilling and production activities, are the ability to out-produce current oil needs and the expectation that the U. S. oil industry will experience comparatively little growth during 1958.

By comparison, 11,601 wildcats were completed in 1955; 10,821 in 1954; and 10,743 in 1953. The 1958 forecast, however, is tantamount to 608 more than twice the number of wildcats completed as late as 1947.

While the number of wildcats drilled during 1957 was 1,241 fewer than in 1956, the number of productive wildcats amounted to 1,202, or 236 fewer than resulted from 1956's greater number of completions. The level of 1,400 productive wildcats was reached only in 1954 (1,434), 1955 (1,444) and 1956 (1,438). These figures include oil, distillate and gas producers.

Texas again will lead in wildcat activity during 1958. Almost half—43 percent—of the nation's wildcat activity will occur in Texas, it is anticipated. A total of 4,520 wildcats is



Forecast of Wildcat Tests to Be Drilled in 1958

STATE or DISTRICT	Forecast For 1958	Drilled In 1957	% Diff. '57-'58
Alabama	25	41	—39.0
Arizona	2	2	.....
Arkansas	195	184	+ 6.0
California	350	379	— 7.7
Colorado	475	483	— 1.7
Florida	5	9	—44.5
Illinois	685	736	— 6.9
Indiana	160	169	— 5.3
Kansas	900	1,005	—10.0
Kentucky	120	117	+ 2.6
Louisiana	650	637	+ 2.0
North Louisiana	210	201	+ 4.5
South Louisiana	440	436	+ 0.9
[1] Gulf of Mexico	80	69	+15.9
Michigan	150	150	.....
Mississippi	190	188	+ 1.1
Missouri	10	10	.....
Montana	165	172	— 4.1
Nebraska	410	451	— 9.1
New Mexico	315	297	+ 6.1
North Dakota	150	148	+ 1.4
Ohio	10	9	+11.1
Oklahoma	580	659	—12.0
Pennsylvania	40	39	+ 2.6
South Dakota	22	39	—43.6
Texas	4,520	5,025	—10.1
Dist. 1: South Central	300	372	—19.4
Dist. 2: Middle Gulf	265	266	— 0.4
Dist. 3: Upper Gulf	370	435	—15.0
Dist. 4: Lower Gulf-S.W.	450	463	— 2.8
Dist. 5 & 6: East	425	395	+ 7.6
Dist. 7-B & 9: North	1,850	2,062	—10.3
Dist. 7-C & 8: West	750	876	—14.4
Dist. 10: Panhandle	110	156	—29.5
Utah	140	115	+21.7
West Virginia	20	25	—20.0
Wyoming	265	277	— 4.4
Other States*	20	17	+17.6
Total United States	10,574	11,383	— 7.1

* Other States include Georgia, Idaho, Nevada, Maryland, Oregon, Tennessee, Virginia and Washington.
[1] Gulf of Mexico wells are included in South Louisiana figures.

So accurate it's the world's first choice!

No matter where in the world you go, Kilgore or Kuwait, you'll find oilmen swearing by the accuracy of the TOTCO double recorder. Not satisfied with one reading, the reliable TOTCO double recorder checks itself—with only *seconds* elapsing between first reading and check. That's why most oilmen the world over say, "Be sure you know, use TOTCO!"

TOTCO

Technical Oil Tool Corporation

1057 North La Brea Avenue • Los Angeles 38, California

EXCLUSIVE DISTRIBUTORS: *California*—The Republic Supply Co. of California; *Domestic*—The Continental-Emsco Company, a division of Youngstown Sheet & Tube Company; *Canada*—Oil Well Supply Division, United States Steel Corporation; *Export*—Lucey Export Corp., New York City

forecast for Texas in 1958. By comparison, this is 505 less than the number completed in 1957, or a decline of 10.1 percent.

North Texas (Districts 7-B and 9) is expected to account for 1,850 wildcats in 1958, a drop of 212 wildcat completions, or 10.3 percent, from the previous year.

The second leading Texas district in wildcatting activity—West Texas—will complete 750 wildcats this year as compared to 876 drilled last year, it is forecast. That decline would amount to 116 wildcats, or 14.4 percent.

Only one Texas district is expected to record an increase in 1958 wildcat completions—East Texas. There, the anticipated drilling of 425 wildcats would result in a rise of 30.

Results of Wildcat Drilling in U. S., by Years

	PRODUCTIVE WILDCATS												DRY WILDCATS			TOTAL WILDCATS		
	OIL			DISTILLATE			GAS			TOTAL PRODUCTIVE								
YEAR	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth
1937	203	831,123	4094	3	19,377	6459	33	77,389	2345	239	927,889	3882	1,943	7,173,550	3692	2,182	8,101,439	3713
1938	229	944,455	4124	4	23,657	5914	31	102,440	3305	264	1,070,552	4055	2,179	7,012,901	3218	2,443	8,083,453	3309
1939	224	782,289	3492	1	7,999	7999	33	103,450	3135	258	893,738	3464	2,488	7,764,816	3121	2,746	8,658,554	3153
1940	262	957,167	3653	2	12,792	6396	46	122,439	2662	310	1,092,398	3524	2,672	8,649,828	3237	2,982	9,742,226	3267
1941	301	1,165,966	3874	3	23,505	7835	58	177,974	3069	362	1,367,445	3777	3,047	9,651,013	3167	3,409	11,018,458	3232
1942	288	1,199,382	4165	13	121,620	9355	48	167,428	3488	349	1,488,430	4265	2,652	9,320,691	3515	3,001	10,809,121	3602
1943	276	1,232,396	4465	15	140,564	9371	56	212,814	3800	347	1,585,774	4570	2,951	10,702,429	3627	3,298	12,288,203	3726
1944	326	1,422,250	4363	32	250,228	7820	102	417,944	4097	460	2,090,422	4544	3,425	13,470,846	3933	3,885	15,561,268	4005
1945	317	1,503,763	4744	30	269,915	8997	113	486,529	4306	460	2,260,207	4913	3,486	14,504,642	4161	3,946	16,764,849	4249
1946	308	1,359,787	4415	29	264,441	9119	75	272,564	3634	412	1,896,792	4604	3,830	14,399,824	3760	4,242	16,296,616	3842
1947	436	1,999,100	4585	44	352,691	8016	96	403,038	4198	576	2,754,829	4783	4,407	17,068,382	3873	4,983	19,823,211	3978
1948	610	2,760,127	4525	70	626,026	8943	112	514,990	4598	792	3,901,143	4926	5,618	22,227,790	3957	6,410	26,128,933	4076
1949	668	3,027,759	4533	69	644,454	9340	130	626,058	4816	867	4,298,271	4958	5,914	22,044,695	3728	6,781	26,342,966	3885
1950	811	3,607,484	4448	67	572,807	8549	137	679,851	4962	1,015	4,860,142	4788	6,876	25,882,014	3764	7,891	30,742,156	3896
1951	992	4,767,425	4806	62	564,243	9101	172	937,257	5449	1,226	6,268,925	5113	8,552	34,526,359	4037	9,778	40,795,284	4172
1952	982	4,751,818	4839	111	1,038,256	9354	174	924,735	5315	1,267	6,714,809	5300	8,972	39,430,757	4395	10,239	46,145,566	4507
1953	1,062	5,322,266	5012	97	833,326	8591	259	1,326,976	5123	1,418	7,482,568	5277	9,325	41,551,971	4456	10,743	49,034,539	4564
1954	1,056	5,525,392	5232	118	997,846	8456	260	1,384,545	5325	1,434	7,907,783	5514	9,387	42,227,607	4499	10,821	50,135,390	4633
1955	1,085	5,625,626	5185	123	1,087,452	8841	236	1,163,846	4932	1,444	7,876,924	5455	10,157	47,707,546	4697	11,601	55,584,470	4791
1956	1,070	5,754,326	11296	110	1,042,679	17480	258	1,512,509	5862	1,438	8,309,514	5,779	11,186	50,233,797	4491	12,624	58,543,311	4637
1957	843	4,719,536	5599	120	1,190,984	9925	239	1,454,052	6084	1,202	7,364,572	6,127	10,181	46,509,112	4568	11,383	53,873,684	4733

Results of Wildcat Drilling in U. S. in 1957, by States

	PRODUCTIVE WILDCATS												DRY WILDCATS			TOTAL WILDCATS		
	OIL			DISTILLATE			GAS			TOTAL PRODUCTIVE								
STATE or DISTRICT	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth	No.	Footage	Avge. Depth
Alabama							1	1,641	1641	1	1,641	1641	40	181,162	4529	41	182,803	4459
Arizona													2	4,505	2253	2	4,505	2253
Arkansas	11	56,276	5116				1	7,525	7525	12	63,801	5317	172	611,588	3556	184	675,389	3671
California	9	59,635	6626				4	19,783	4946	13	79,418	6109	366	1,712,272	4678	379	1,791,690	4727
Colorado	22	122,264	5557	2	12,113	6057	16	92,691	5793	40	227,068	5677	443	2,296,183	5183	483	2,523,251	5224
Florida													9	61,732	6859	9	61,732	6859
Georgia													5	25,712	5142	5	25,712	5142
Idaho													1	3,947	3947	1	3,947	3947
Illinois	15	37,871	2525				1	425	425	16	38,296	2394	720	1,575,801	2189	736	1,614,097	2193
Indiana	1	1,723	1723							1	1,723	1723	168	266,122	1584	169	267,845	1584
Kansas	112	426,126	3805				25	120,521	4821	137	546,647	3990	868	3,391,804	3908	1,005	3,938,451	3919
Kentucky	17	27,054	1591				1	1,801	1801	18	28,885	1603	99	134,048	1354	117	162,903	1392
Louisiana	39	352,799	9046	38	476,385	12536	14	155,257	11009	91	984,441	10818	546	5,097,184	9336	637	6,081,625	9547
North Louisiana	16	94,914	5932	2	21,525	10762	3	10,807	3602	21	127,246	6059	180	950,606	5291	201	1,077,912	5363
South Louisiana	23	257,885	11212	36	454,860	12635	11	144,450	13132	70	857,195	12246	366	4,146,518	11329	436	5,003,713	11476
Michigan	13	34,164	2628				1	3,641	3641	14	37,805	2700	136	342,320	2517	150	380,125	2534
Mississippi	10	95,045	9505	1	13,868	13868				11	108,913	9901	177	1,297,117	7328	188	1,406,030	7479
Missouri													10	7,287	729	10	7,287	729
Montana	4	29,989	7497				5	15,545	3109	9	45,534	5059	163	778,582	4777	172	824,116	4791
Nebraska	37	225,011	6081				2	8,521	4261	39	233,532	5988	412	2,362,824	5735	451	2,596,356	5757
Nevada													5	11,260	2252	5	11,260	2252
New Mexico	45	331,341	7363	2	28,242	14121	9	48,370	5374	56	407,953	7285	241	1,093,003	4535	297	1,500,956	5054
New York																		
North Dakota	22	156,435	7111							22	156,435	7111	126	640,172	5081	148	796,607	5382
Ohio	1	3,440	3440							1	3,440	3440	8	27,967	3496	9	31,407	3490
Oklahoma	68	374,496	5507	9	71,389	7932	28	173,466	6195	105	619,351	5899	554	2,382,586	4301	659	3,001,937	4555
Oregon													3	19,396	6465	3	19,396	6465
Pennsylvania							26	198,412	7631	26	198,412	7631	13	104,260	8020	39	302,672	7761
South Dakota													39	130,463	3345	39	130,463	3345
Tennessee																		
Texas	388	2,198,253	5666	67	581,412	8678	80	479,478	5893	535	3,259,143	6092	4,490	20,075,160	4471	5,025	23,334,303	4644
Dist. 1: S. Central	19	67,326	3543	2	20,976	10488	3	5,823	1941	24	94,125	3922	348	1,076,421	3093	372	1,170,546	3147
Dist. 2: Middle Gulf	5	37,392	7478	17	146,725	8631	12	69,049	5754	34	253,166	7446	232	1,431,990	6172	166	1,685,156	6335
Dist. 3: Upper Gulf	26	218,253	8394	13	118,081	9083	5	48,227	9645	44	384,561	8740	391	3,093,135	7911	435	3,477,696	7995
Dist. 4: L. Gulf-S.W.	20	96,701	4835	8	62,300	7788	4	19,275	4819	32	178,276	5571	331	2,282,961	6897	463	2,461,237	5316
Dist. 5: East Central	3	21,294	7098	1	9,244	9244	2	10,232	5116	6	40,770	6795	127	528,888	4164	133	569,658	4283
Dist. 6: Northeast	9	57,561	6396	2	10,832	5416	4	25,308	6327	15	93,701	6247	247	1,389,424	5625	262	1,483,125	5661
Dist. 7-B: North Central	97	387,397	3994				9	34,369	3819	106	421,766	3979	900	2,907,278	3230	1,006	3,329,044	3309
Dist. 7-C: West Central	38	199,290	5244	2	20,784	10392	7	37,613	5373	47	257,687	5483	278	1,184,255	4260	325	1,441,942	4437
Dist. 8: West	92	737,920	8021	2	20,150	10075	6	27,320	4553	100	785,390	7854	451	2,645,619	5866	551	3,431,009	6227
Dist. 9: North	67	280,912	4193	3	14,797	4931	8	46,047	5756	78	341,756	4381	978	2,848,598	2913	1,056	3,190,354	3021
Dist. 10: Panhandle	12	94,207	7851	17	157,523	9266	20	156,215	7811	49	407,945	8325	107	686,591	6417	156	1,094,536	7016
Utah	12	73,532	6128				3	14,822	4941	15	88,354	5890	100	528,268	5283	115	616,622	5362
Washington													3	16,329	5443	3	16,329	5443
West Virginia							12	59,741	4978	12	59,741	4978	13	72,150	5550	25	131,891	5276
Wyoming	17	114,082	6711	1	7,575	7575	10	52,412	5241	28	174,069	6217	249	1,257,908	5052	277	1,431,977	5170
U. S. Total, 1957	843	4,719,536	5599	120	1,190,984	9925	239	1,454,052	6084	1,202	7,364,572	6127	10,181	46,509,112	4568	11,383	53,873,684	4733

Ratio of Wildcatting to All Drilling and Proportion of Wildcats Discovering New Fields, by Years, 1937-1957

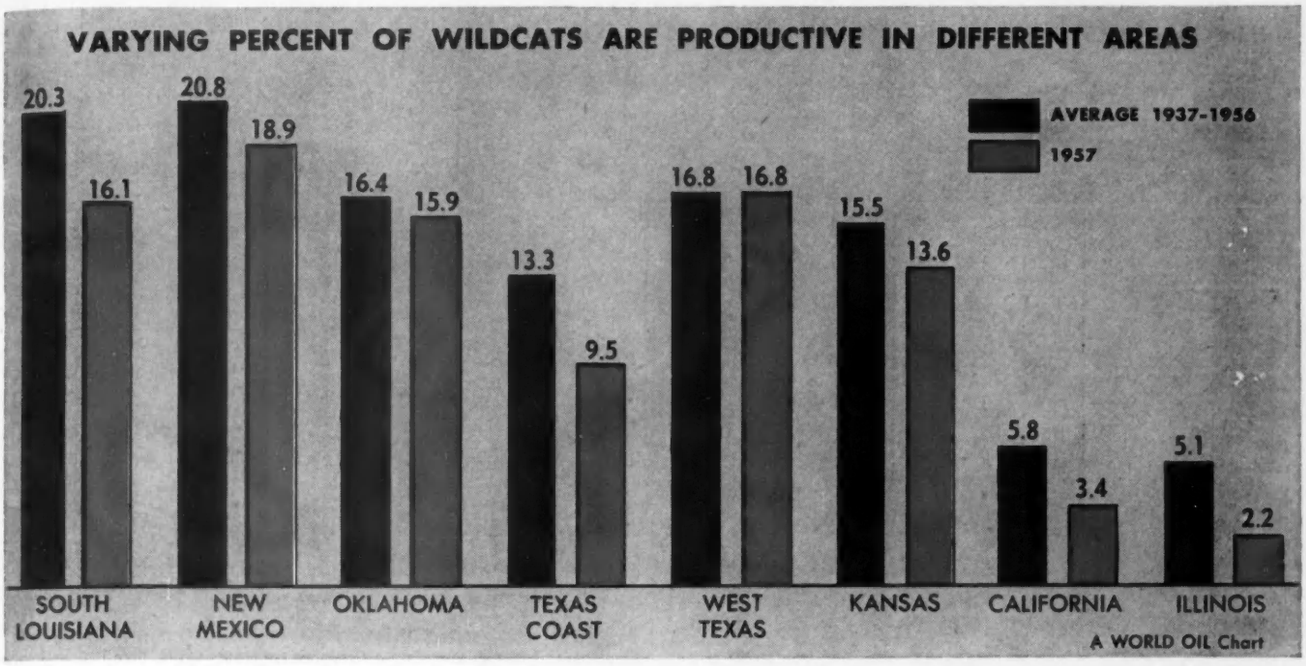
YEAR	Total New Wells Drilled for Oil or Gas*	TOTAL WILDCATS		Dry Wildcats	PRODUCTIVE WILDCATS					
					TOTAL		OIL		GAS & DISTILLATE	
		Number	Percent of All Wells		Number	Percent of All Wildcats	Number	Percent of All Wildcats	Number	Percent of All Wildcats
1937	32,474	2,182	6.7	1,943	239	11.0	203	9.3	36	1.6
1938	27,764	2,443	8.8	2,179	264	10.8	229	9.4	35	1.4
1939	26,654	2,746	10.3	2,483	258	9.4	224	8.2	34	1.2
1940	29,161	2,982	10.2	2,672	310	10.4	262	8.8	48	1.6
1941	30,149	3,409	11.3	3,047	362	10.6	301	8.8	61	1.8
1942	19,729	3,001	15.2	2,652	349	11.6	288	9.6	61	2.0
1943	18,641	3,298	17.7	2,951	347	10.5	276	8.4	71	2.1
1944	23,733	3,885	16.4	3,425	460	11.8	326	8.4	134	3.4
1945	24,482	3,946	16.1	3,486	460	11.7	317	8.1	143	3.6
1946	28,145	4,242	15.1	3,830	412	9.7	308	7.3	104	2.5
1947	31,084	4,983	16.0	4,407	576	11.6	436	8.8	140	2.8
1948	37,448	6,410	17.1	5,618	792	12.4	610	9.5	182	2.9
1949	37,812	6,781	17.9	5,914	867	12.8	668	9.9	199	2.9
1950	42,173	7,891	18.7	6,876	1,015	12.9	811	10.3	204	2.6
1951	45,996	9,778	21.3	8,552	1,226	12.5	992	10.1	234	2.5
1952	45,275	10,239	22.6	8,972	1,267	12.4	982	9.6	285	2.8
1953	48,242	10,743	22.3	9,325	1,418	13.2	1,062	9.9	356	3.3
1954	51,419	10,821	21.0	9,387	1,434	13.3	1,056	9.8	378	3.5
1955	55,207	11,601	21.0	10,157	1,444	12.4	1,085	9.3	359	3.1
1956	57,390	12,624	22.0	11,186	1,438	11.4	1,070	8.5	368	2.9
1957	51,995	11,383	21.9	10,181	1,202	10.6	843	7.4	359	3.2

* Not including service wells.

Ratio of Wildcatting to All Drilling and Proportion of Wildcats Discovering New Fields, by States, 1937-1957

STATE or DISTRICT	TWENTY YEARS, 1937-1956						YEAR, 1957					
		WILDCAT WELLS						WILDCAT WELLS				
		TOTAL			PRODUCTIVE			TOTAL			PRODUCTIVE	
	Total New Wells Drilled for Oil or Gas[1]	Number	Percent of All Wells	Dry	Number	Percent of All Wildcats	Total New Wells Drilled for Oil or Gas	Number	Percent of All Wells	Dry	Number	Percent of All Wildcats
Alabama	701	458	65.3	449	9	2.0	94	41	43.6	40	1	2.4
Arizona	75	75	100.0	70	5	6.7	2	2	100.0	2	.....	....
Arkansas	7,344	1,649	22.5	1,510	139	8.4	1,103	184	16.7	172	12	6.5
California	37,406	5,281	14.1	4,973	308	5.8	2,250	379	16.8	366	13	3.4
Colorado	6,612	3,166	47.9	2,882	284	9.0	815	483	59.3	443	40	8.3
Florida	273	254	93.0	252	2	.8	9	9	100.0	9	.....	....
Georgia	72	72	100.0	72	.....	....	5	5	100.0	5	.....	....
Idaho	25	25	100.0	24	1	4.0	1	1	100.0	1	.....	....
Illinois	51,944	11,025	24.8	10,458	567	5.1	2,587	736	28.4	720	16	2.2
Indiana	14,252	4,165	29.2	3,829	336	8.1	715	169	23.6	168	1	0.6
Iowa	23	23	100.0	23	.....	....	.....	.....	....	.....	.....	....
Kansas	57,403	11,541	20.1	9,750	1,791	15.5	4,120	1,005	24.4	868	137	13.6
Kentucky	22,590	2,229	9.9	1,974	255	11.4	1,741	117	6.7	99	18	15.4
Louisiana	39,613	5,719	14.4	4,910	809	14.1	3,772	637	16.9	546	91	14.3
North Louisiana	20,287	2,795	13.8	2,579	216	7.7	1,433	201	14.0	180	21	10.4
South Louisiana	19,326	2,924	15.1	2,331	593	20.3	2,339	436	18.6	366	70	16.1
Maryland	113	13	11.5	10	3	23.1	3	.....	....	.....	.....	....
Michigan	15,623	5,055	32.4	4,706	349	6.9	419	150	35.8	136	14	9.3
Mississippi	5,668	2,233	39.4	2,105	128	5.7	390	188	48.2	177	11	5.9
Missouri	1,004	293	29.2	289	4	1.4	10	10	100.0	10	.....	....
Montana	5,641	1,062	18.8	958	104	9.8	429	172	40.1	163	9	5.2
Nebraska	3,424	1,692	49.4	1,516	176	10.4	893	451	50.5	412	39	8.6
Nevada	44	40	90.9	39	1	2.5	5	5	100.0	5	.....	....
New Jersey	1	1	100.0	1	.....	....	.....	.....	....	.....	.....	....
New Mexico	15,307	2,016	13.2	1,596	420	20.8	2,190	297	13.6	241	56	18.9
New York	14,341	139	1.0	129	10	7.2	298	.....	....	.....	.....	....
North Carolina	19	19	100.0	19	.....	....	.....	.....	....	.....	.....	....
North Dakota	1,228	403	32.9	370	33	8.2	312	148	47.4	126	22	14.9
Ohio	22,131	488	2.2	436	52	10.7	1,011	9	0.9	8	1	11.1
Oklahoma	78,975	9,885	12.5	8,262	1,623	16.4	5,255	659	12.5	554	105	15.9
Oregon	20	20	100.0	20	.....	....	3	3	100.0	3	.....	....
Pennsylvania	34,109	191	.6	147	44	23.0	677	39	5.8	13	26	66.7
South Carolina	7	7	100.0	7	.....	....	.....	.....	....	.....	.....	....
South Dakota	124	118	95.2	117	1	.8	41	39	95.1	39	.....	....
Tennessee	680	385	56.6	364	21	5.5	20	.....	....	.....	.....	....
Texas	252,097	51,635	20.5	44,594	7,041	13.7	21,051	5,025	23.9	4,490	535	10.6
Dist. 1: South Central	11,683	4,152	35.5	3,881	271	6.5	1,253	372	29.7	348	24	6.5
Dist. 2: Middle Gulf	[2]	[2]	....	[2]	[2]	....	760	266	35.0	232	34	12.8
Dist. 3: Upper Gulf	24,324	4,881	20.1	4,270	611	12.5	1,643	435	26.5	391	44	10.1
Dist. 4: L. Gulf-S.W.	41,021	10,216	25.0	8,819	1,397	13.7	1,426	463	32.5	331	32	6.9
Dist. 5: East Central	[3]	[3]	....	[3]	[3]	....	180	133	73.9	127	6	4.5
Dist. 6: Northeast	20,047	3,633	18.1	3,391	242	6.7	1,069	262	24.5	247	15	5.7
Dist. 7-B: N. Central	[4]	[4]	....	[4]	[4]	....	2,659	1,006	37.8	900	106	10.5
Dist. 7-C: W. Central	[5]	[5]	....	[5]	[5]	....	1,153	325	28.2	278	47	14.5
Dist. 8: West	61,877	8,084	13.1	6,728	1,356	16.8	4,967	551	11.1	451	100	18.1
Dist. 9: North	79,469	20,161	25.4	17,091	3,070	15.2	4,491	1,056	23.5	978	78	7.4
Dist. 10: Panhandle	13,676	508	3.7	414	94	18.5	1,450	156	10.8	107	49	31.4
Utah	652	447	68.6	396	51	11.4	285	115	40.4	100	15	13.0
Virginia	223	36	16.1	27	9	25.0	15	.....	....	.....	.....	....
Washington	54	54	100.0	54	.....	....	4	3	75.0	3	.....	....
West Virginia	14,659	207	1.4	127	80	38.6	663	25	3.8	13	12	48.0
Wyoming	8,500	1,847	21.7	1,567	280	15.2	807	277	34.3	249	28	10.1
Total U.S.	712,977	123,968	17.4	109,032	14,936	12.0	51,995	11,383	21.9	10,181	1,202	10.6

[1] Does not include service wells. [2] Dist. 2 included with Dist. 4. [3] Dist. 5 included with Dist. 6. [4] Dist. 7-B included with Dist. 9.
[5] Dist. 7-C included with Dist. 8.



Only 10% of U.S. wildcats produce in 1957

A TOTAL OF 1202 of the 11,383 wildcats drilled in the U. S. during 1957 found oil, gas or distillate production.

By comparison, of the 12,624 wildcats drilled during 1956, there were 1438 that found oil, gas or distillate production. Consequently, the portion of wild cats which found production declined from 11.4 percent in 1956 to 10.6 percent in 1957.

Of the seven most active wildcatting areas, New Mexico recorded the most outstanding percentage of successes last year, followed by West Texas, Oklahoma and Louisiana, in that order. Percentage of all wildcats found productive in these areas in 1957 were 18.9 percent, 18.1 percent, 15.9 percent and 14.3 percent, respectively, as compared with the national average of 10.6 percent.

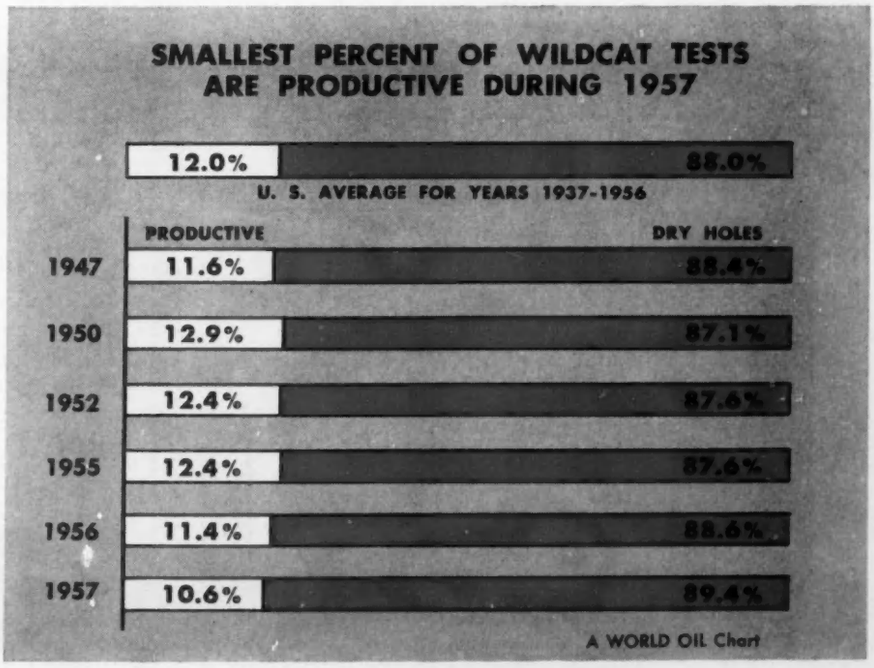
Kansas followed with 13.6 percent of its 1957 wildcats productive. Then came Central Texas (10.5 percent), North Texas (7.4 percent) and Illinois (2.2 percent).

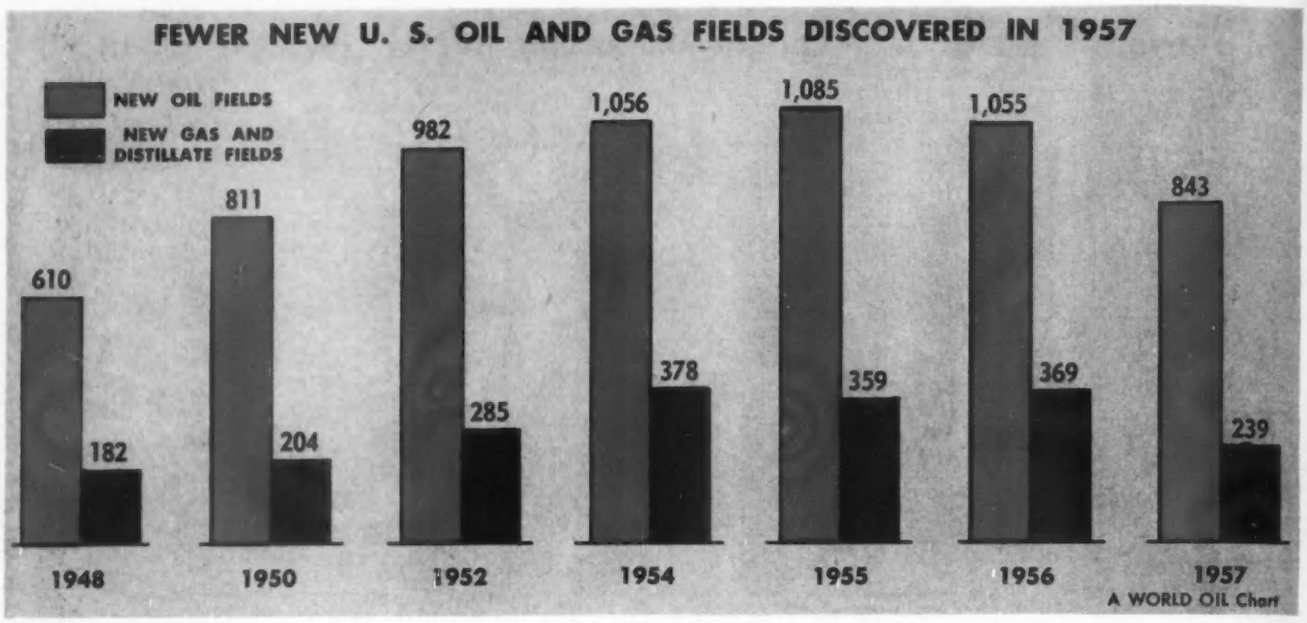
Of the more active exploration areas, New Mexico and South Louisiana paced the nation for the highest portion of wildcatting success during the 20-year period between 1937 and 1956. During that period, 20.8 percent of New Mexico's wildcats have produced, and 20.3 percent of South Louisiana's wildcats have found oil, gas or distillate production. By comparison, the national average for the period was an even 12 percent.

Of interest, too, California recorded a percentage productive level during the 20-year period of only 5.8 percent. The state's percentage in 1957 was but 3.4 percent.

Texas, whose percentage success level of 10.6 percent in 1957 matched the national average, had a percentage productive level during the 1937-1956 period of 13.7 percent.

In late years, newer testing techniques and equipment have assisted in the discovery of many producing zones which previously were overlooked.





New field discovery rate falls to 1202

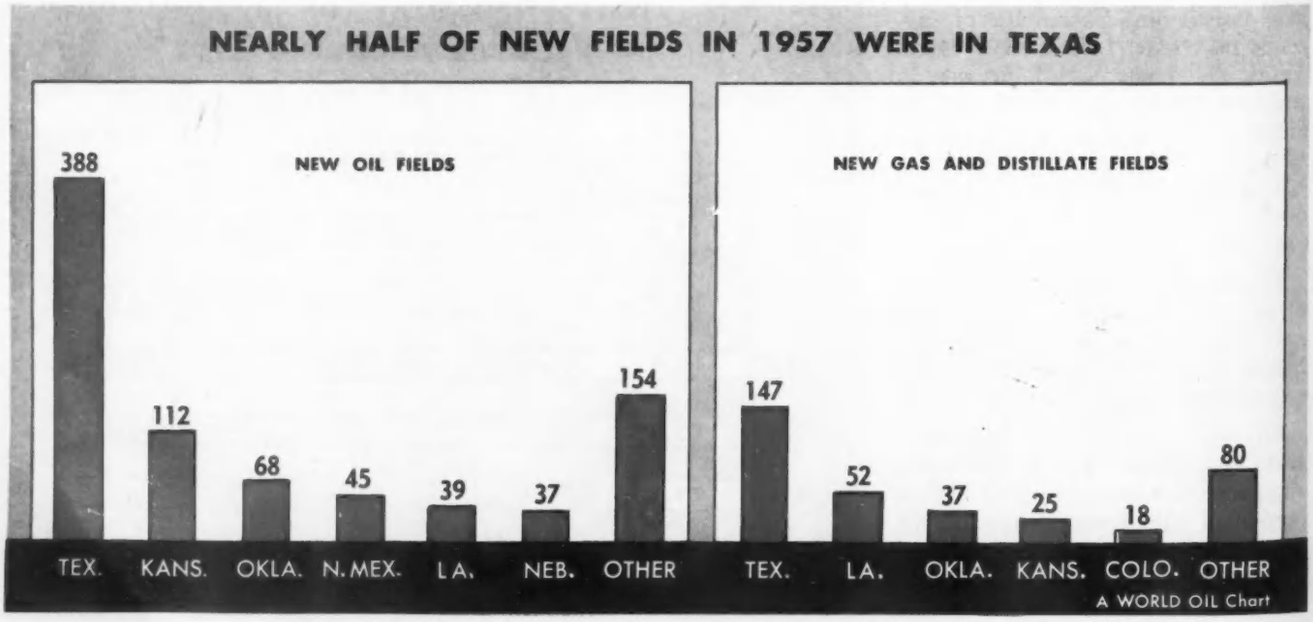
A DECLINING rate of new-field discoveries occurred in the U. S. last year, when 1202 new oil, gas or distillate fields was found. While this number was 236 below 1956 and 242 below the record new-field discovery year of 1955, it still was more than double the number of new fields found in 1947.

The 16.4 percent decline in 1957 discoveries compared with a 0.4 percent drop in the previous year. A 0.7 percent increase in 1955 ended the rising trend which had existed since the close of World War II. For the past eight years, more than 1000 new fields have been found annually.

The general decrease last year extended to all three types of fields—oil, gas and distillate. Last year's 843 new oil field discoveries amounted to a decrease of 227 from 1956's total of 1070. New gas and distillate fields numbered 359 last year, only 9 fewer than the 368 discovered during the previous year.

Texas, continuing its perennial trend through 1957, again led the U. S. in total new oil, gas and distillate discoveries with 535. This compares with 685 in 1956. Of the 1957 total, 388 found new oil fields—46 percent of all 1957 oil discoveries—67 found distillate fields, and 80 discovered new gas fields. Thus, the state led in all three new-field discovery categories.

Kansas again was second in new oil field discoveries with 112.



21.9% of wells drilled are wildcats

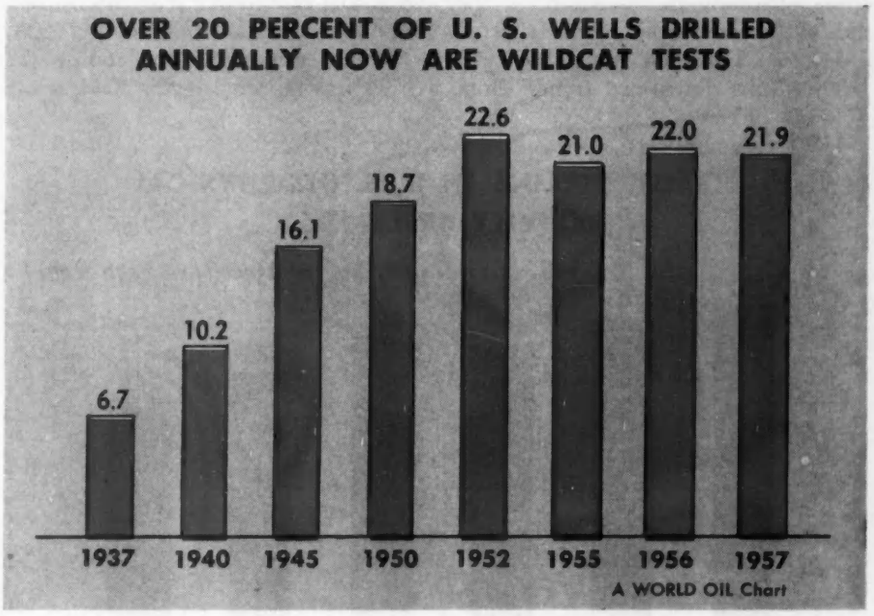
WILDCAT DRILLING in 1957 continued to furnish more than a fifth of all wells completed annually in the U. S. In ratio to all wells, wildcats last year slipped 0.1 percent from the 22 percent level recorded for 1956.

In representing 21.9 percent of all wells drilled in search of production during 1957, wildcats remained under the levels established in 1953 and 1952, when 22.3 percent and 22.6 percent, respectively, were wildcats.

However, last year's ratio was an improvement over the 21 percent ratio recorded in both 1955 and 1954.

During recent years, the portion of U. S. wells drilled on exploratory sites has been significantly higher than earlier years. Less than 10 percent of total U. S. completions were wildcats prior to 1939. The ratio to all wells drilled rose to 10 percent in 1939 and 1940, then climbed to more than 17 percent in 1943.

After holding fairly firm at a level below the 1943 ratio for several years, the ratio rose to 18.7 percent in 1950. Each succeeding year since that time has seen a 21 or 22 percent ratio.



During the 1937-1956 period, the ratio of all drilling devoted to wildcats amounted to 17.4 percent.

Illinois wildcat ratio is highest

WILDCAT DRILLING accounts for varying percentages of total drilling activities in different states. Illinois and Kansas again led the more active drilling states with 28.4 percent and 24.4 percent of their total drilling credited to exploratory efforts. The positions of these two leading states were identical in the previous year, with wildcat drilling in each accounting for 26 percent of total drilling.

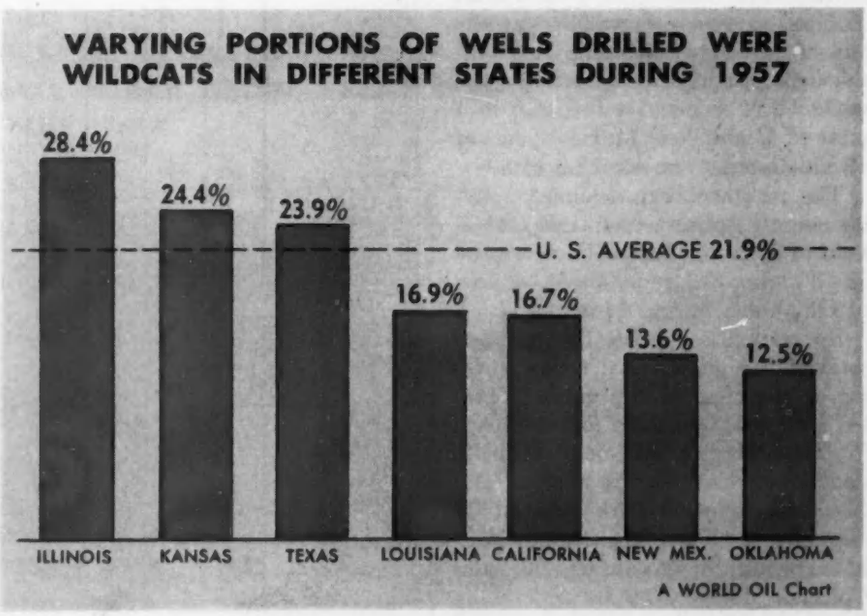
Almost a fourth of the 21,051 wells completed in Texas during 1957 were wildcats. The 5025 wildcats drilled in the state represented 23.9 percent of all wells.

The ratio of wildcatting to total drilling varied considerably in the different districts of the state.

The highest wildcat ratio to all wells was 73.9 percent in the East Central district. In the North Central district, 37.8 percent of all wells were wildcats, in the Middle Gulf Coast 35.0 percent, in the South West Gulf district 32.5 percent, in South Central district 29.7 percent, in West Central district 28.2 percent, and 26.5 percent in the Upper Gulf Coast district.

Only 11.1 percent of West Texas drilling resulted from wildcatting, and only 10.8 percent in the Panhandle district.

In comparison with the national percent of 21.9 percent of all new wells drilled being wildcats, only 16.9 percent of 1957 Louisiana completions were wildcats. In 1956, the level was 17.8 percent.



Number of active geophysical crews dips

THE NUMBER of active geophysical crews operating in the U. S. at the end of November last year reflected a dip of 7.5 percent from 1956.

Thus, this downward trend—from 588 to 544—extended the decline in operating rate to five year, interrupted only by a slight increase in 1955.

In November, 1952, a total of 722 crews was reported in the field, while the level eased to 705 in 1953. In 1954, the number again slipped—to 659—and rose to 662, an increase of three crews, the following year. The sharpest single decline, totaling 74 crews or 11 percent, occurred in 1956.

Magnetometer crews were the only ones which recorded an increase in the 1957 national operational level. Last year's figure of eight was an increase of three from the previous year.

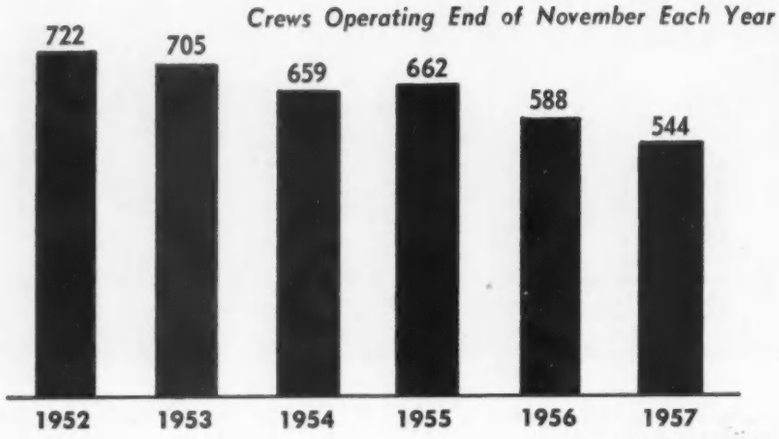
On the declining side in 1957 were both seismic and gravity crews. Seismic operations recorded the largest drop—34 crews fewer than the 511 which were operating in the field at the end of November, 1956.

Fifty-nine gravity crews were reported operating at November's end in 1957. This figure amounted to a decline of 13 from the previous year's total of 72.

There was a one-crew increase—to 23—in core drilling activity at the end of November, 1956, compared with the same period in 1956.

STEADY DECLINE IN U. S. GEOPHYSICAL ACTIVITY SINCE 1952

Crews Operating End of November Each Year



A WORLD OIL Chart

Geophysical activity centers in 9 states

THE NINE leading exploration states, which accounted during 1956 for 88.4 percent of all U. S. geophysical activity, increased their total share last year on a percentage basis to 90.8 percent.

Only three of the top nine states reported increases in working crews during 1957. Mississippi recorded an increase of 10 crews—to 38—at the end of November as compared with the same period of the previous year, while Utah reported a rise of 6 to a total of 42 and New Mexico's level of 49 amounted to an increase of 1.

The six states with declining activity were Texas, which dropped a total of 20 crews; Louisiana decreased by 13 crews; Colorado, 10; Wyoming, 6; Oklahoma 3; and Montana, 1.

By comparison with the national total of 544 geophysical crews working at the close of November, Texas led with 164, Louisiana followed with 97, New Mexico was next with 49, and Utah had 42. Mississippi and Montana followed with 38 and 37 crews, respectively. Then came Oklahoma with 25; Wyoming, 23; and Colorado, 19.

Geophysical and Core Drilling Crews Operating at End of November, 1956 and 1957

(Source: Interstate Oil Compact Commission)

	GEOPHYSICAL CREWS								CORE DRILL CREWS		Total Geophysical and Core Drill	
	Seismic		Gravity		Magnetometer		Total Geophysical					
STATE	1956	1957	1956	1957	1956	1957	1956	1957	1956	1957	1956	1957
Alabama	3	2	....	....	....	....	3	2	....	....	3	2
Arizona	2	13	...	1	....	....	2	14	....	....	2	14
Arkansas	4	6	1	....	....	....	5	6	....	....	5	6
California	14	6	4	1	....	....	18	7	....	....	18	7
Colorado	22	16	7	3	....	....	29	19	....	....	29	19
Florida	2	3	....	1	....	....	2	4	1	1	3	5
Georgia	....	....	....	....	....	....	....	....	....	1	....	1
Idaho	....	....	....	....	....	....	....	....	1	1	1	1
Illinois	3	2	....	1	....	....	3	3	1	3	4	6
Indiana	....	....	....	....	....	....	....	....	2	1	2	1
Kansas	10	11	1	1	....	....	11	12	....	2	11	14
Louisiana	101	87	9	10	....	....	110	97	....	....	110	97
N. Louisiana	14	11	4	3	....	....	18	14	....	....	18	14
S. Louisiana	87	76	5	7	....	....	92	83	....	....	92	83
Michigan	....	....	....	1	....	....	....	1	1	....	1	1
Mississippi	26	33	2	5	....	....	28	38	2	1	30	39
Montana	31	25	6	2	1	....	38	27	1	....	39	27
Nebraska	1	2	1	....	....	....	2	2	....	....	2	2
Nevada	2	1	1	....	....	....	3	1	1	....	4	1
New Mexico	41	41	6	7	1	1	48	49	....	....	48	49
North Dakota	8	8	1	....	....	....	9	8	....	....	9	8
Oklahoma	27	24	....	....	1	1	28	25	....	....	28	25
South Dakota	....	....	....	....	....	....	....	....	....	....	....	....
Texas	161	143	22	17	1	4	184	164	9	6	193	170
(North)	7	9	2	....	....	....	9	9	1	1	10	10
(East)	16	17	2	6	1	....	19	23	1	....	20	23
(Southeast)	35	32	7	3	....	....	42	35	....	....	42	35
(Southwest)	36	35	4	1	....	....	40	36	....	....	40	36
(West Central)	11	2	1	2	....	....	12	4	2	2	14	6
(West)	56	48	6	5	....	4	62	57	5	3	67	60
Utah	27	31	8	9	1	2	36	42	3	7	39	49
Wyoming	26	23	3	....	....	....	29	23	....	....	29	23
Total	511	477	72	59	5	8	588	544	22	23	610	567

Crude, natural gas liquids reserves rise

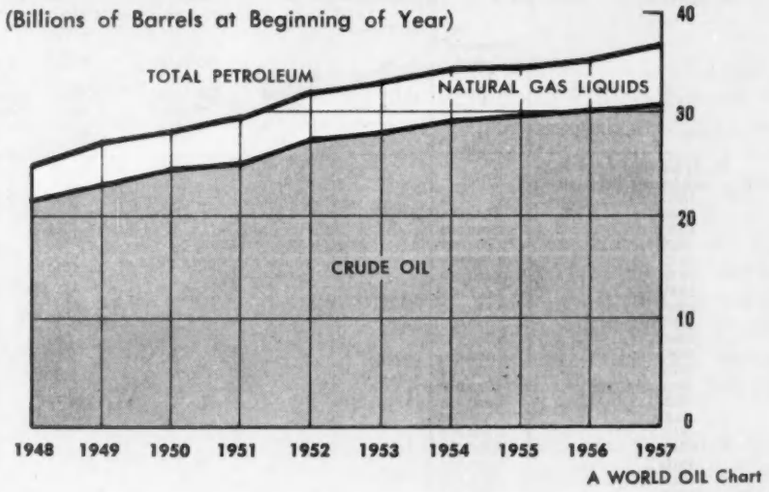
THE U. S. OIL industry continues to find more liquid hydrocarbons than it produces. However, natural gas liquids outpaced crude oil in reserve increases during 1956—for the first time in more than 10 years.

At the start of 1957, U. S. proved unproduced crude oil and natural gas liquid reserves totaled more than 36.3 billion barrels, an increase of 886 million barrels over the same period in 1956. Of this total, crude reserves accounted for 30.4 billion barrels, 422 million barrels more than were reported at the start of 1956. Even so, the crude reserve increase was more than 41 million barrels under the natural gas liquids increase of 463.8 million barrels to a new total reserve figure of 5.9 billion barrels.

The above figures are the latest available. Reserve estimates for the end of 1957 will not become available from the American Petroleum Institute until next month.

New reserves developed during 1957 are again expected to exceed production, further increasing the nation's proved reserves of liquid hydrocarbons. However, the rate of increase will be lower than in previous years. Reasons: An over-all decrease in drilling activity, wildcatting, new producing wells completed and discovery of new fields was prevalent throughout the industry last year.

U.S. PETROLEUM RESERVES CONTINUE TO GROW



New Discovery Records. With the exception of a record volume of new liquid hydrocarbon reserves during 1951, the new reserves found during 1956, 3.8 billion barrels, was the highest total to be added to the nation's supply in seven years.

Because of the many uncertain elements involved in finding new fields and pools, it is natural that there should be great variation in the quantity of new supply found from year to year. During the past 10 years, the volume of liquid hydrocarbons found annually has varied from a low of 2.7 billion barrels in 1947 to a high of 5.1 billion barrels in 1951.

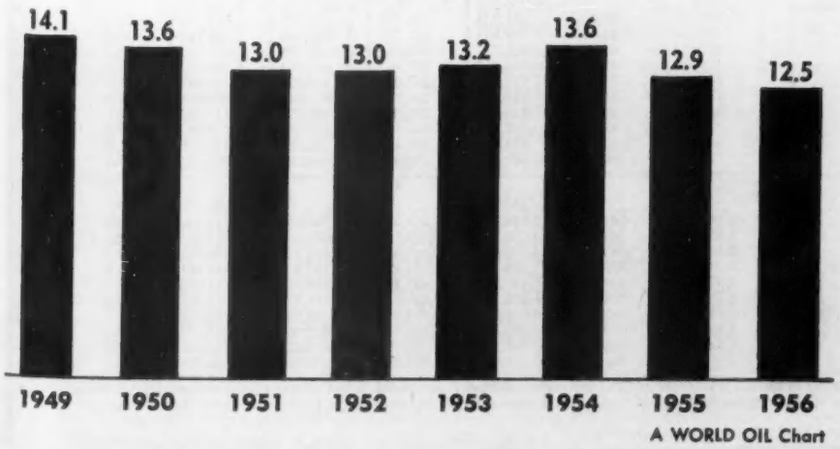
Although the total of new crude oil reserves found during 1957 was at a four-year high of 2.97 billion barrels, discoveries of new natural gas liquids reserves rose to the highest point (809.2 million barrels) in recent oil industry history.

Two factors contributed to the record increase in new reserves of natural gas liquids: Total revisions and extensions accounted for 715.8 million barrels of new reserves, the largest volume in at least 10 years. And new pool discoveries resulted in the addition of 94 million more barrels to the total supply, the second largest volume in at least 10 years. Only in 1953, when 95.9 million barrels of reserves were found in new pools, did the volume exceed 1956.

Ratio of Crude to Gas Reserves. As further indication of the rapid growth of natural gas liquid reserves compared with crude oil, in 1949 there were 6.6 times more crude oil reserves at the end of the year than natural gas liquids. By 1952, the ratio of crude oil to natural gas liquids reserves had been pared to 5.6 to 1, which continued through 1954. In 1956 there were only 5.1 more crude oil reserves in the U. S. than natural gas liquids.

RATIO OF U.S. PETROLEUM RESERVES TO PRODUCTION TAKES SHARP DROP

(Total Hydrocarbon Reserves at End of Year Divided by Year's Production)



Estimated Proved Reserves of Crude Oil, Natural Gas Liquids, and Total Liquid Hydrocarbons in the United States, by Years

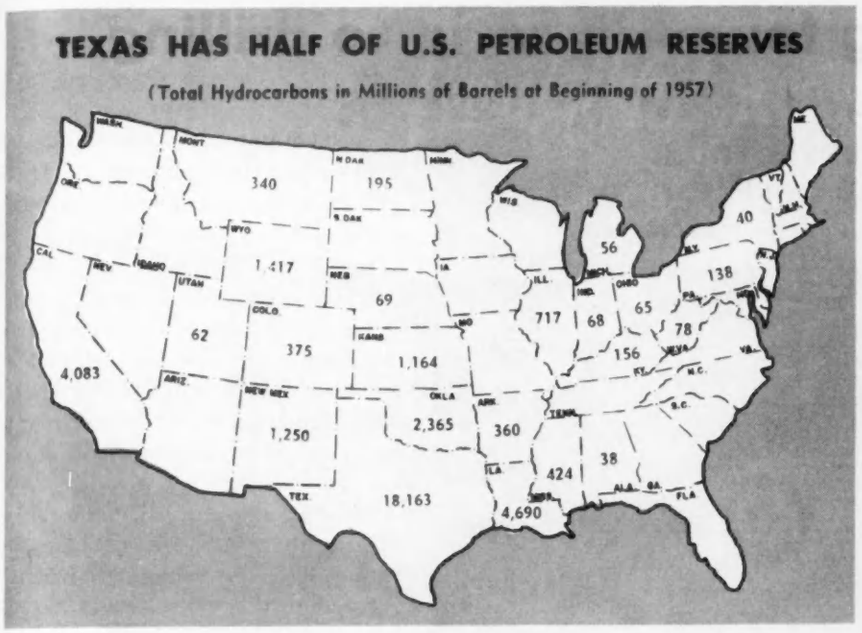
(Sources: Crude oil by American Petroleum Institute; natural gas liquids and total liquid hydrocarbons by API and American Gas Association. Reserves at end of 1936 and for subsequent years estimated by committees on reserves; earlier data estimated by API department of statistics but not based on geological surveys.)

(THOUSANDS OF BARRELS)

YEAR	Estimated Proved Reserves Beginning of Year	CHANGES IN RESERVES DURING YEAR (ADDITION) RESERVES PROVED DURING YEAR: Revisions of Previous Estimates	Extensions to Old Pools	Total Revisions and Extensions (Col. 2+3)	New Pools Discovered During Year	Total Reserves Proved During Year (Cols. 4+5)	(Deduction) *Production During Year	(Net Change) Increase or Decrease (Col. 6—Col. 7)	Estimated Proved Reserves at End of Year (Col. 1+Col. 8)	Ratio of Year-End Reserves to Year's Prod. (Year's Supply) (Col. 9÷Col. 7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Crude Oil (Incl. Cycle Plant and Lease Condensate)										
1857-1899	0					†3,439,984	†939,984	†+2,500,000	2,500,000	‡43.8
1900	2,500,000					463,621	63,621	+ 400,000	2,900,000	45.6
1901	2,900,000					169,389	69,389	+ 100,000	3,000,000	43.2
1902	3,000,000					288,767	88,767	+ 200,000	3,200,000	36.0
1903	3,200,000					300,461	100,461	+ 200,000	3,400,000	33.8
1904	3,400,000					317,081	117,081	+ 200,000	3,600,000	30.7
1905	3,600,000					334,717	134,717	+ 200,000	3,800,000	28.2
1906	3,800,000					126,494	126,494	.....	3,800,000	30.0
1907	3,800,000					266,095	166,095	+ 100,000	3,900,000	23.5
1908	3,900,000					278,527	178,527	+ 100,000	4,000,000	22.4
1909	4,000,000					383,171	183,171	+ 200,000	4,200,000	22.9
1910	4,200,000					509,557	209,557	+ 300,000	4,500,000	21.5
1911	4,500,000					720,449	220,449	+ 500,000	5,000,000	22.7
1912	5,000,000					622,935	222,935	+ 400,000	5,400,000	23.8
1913	5,400,000					348,446	284,466	+ 100,000	5,500,000	22.1
1914	5,500,000					165,763	265,763	— 100,000	5,400,000	19.9
1915	5,400,000					381,104	281,104	+ 100,000	5,500,000	19.6
1916	5,500,000					700,767	300,767	+ 400,000	5,900,000	19.8
1917	5,900,000					335,316	335,316	.....	5,900,000	17.6
1918	5,900,000					655,928	355,928	+ 300,000	6,200 000	17.4
1919	6,200,000					878,367	378,367	+ 500,000	6,700,000	17.7
1920	6,700,000					942,929	442,929	+ 500,000	7,200,000	16.3
1921	7,200,000					1,072,183	472,183	+ 600,000	7,800,000	16.5
1922	7,800,000					357,531	557,531	— 200,000	7,600,000	13.6
1923	7,600,000					732,407	732,407	.....	7,600,000	10.4
1924	7,600,000					613,940	713,940	— 100,000	7,500,000	10.5
1925	7,500,000					1,763,743	763,743	+1,000,000	8,500,000	11.1
1926	8,500,000					1,070,874	770,874	+ 300,000	8,800,000	11.4
1927	8,800,000					2,601,129	901,129	+1,700,000	10,500,000	11.7
1928	10,500,000					1,401,474	901,474	+ 500,000	11,000,000	12.2
1929	11,000,000					3,207,323	1,007,323	+2,200,000	13,200,000	13.1
1930	13,200,000					1,298,011	898,011	+ 400,000	13,600,000	15.1
1931	13,600,000					251,081	851,081	— 600,000	13,000,000	15.3
1932	13,000,000					85,159	785,159	— 700,000	12,300,000	15.7
1933	12,300,000					605,656	905,656	— 300,000	12,000,000	13.3
1934	12,000,000					1,085,065	908,065	+ 177,000	12,177,000	13.4
1935	12,177,000					1,219,596	996,596	+ 233,000	12,400,000	12.4
1936	12,400,000					1,763,087	1,099,687	+ 663,400	13,063,400	11.9
1937	13,063,400			2,792,790	928,742	3,721,532	1,277,664	+2,433,868	15,507,268	12.1
1938	15,507,268			2,243,571	810,493	3,054,064	1,213,186	+1,840,878	17,348,146	14.3
1939	17,348,146			2,058,455	340,667	2,399,122	1,264,256	+1,134,866	18,483,012	14.6
1940	18,483,012			1,607,012	286,338	1,893,350	1,351,847	+ 541,503	19,024,515	14.1
1941	19,024,515			1,538,989	429,974	1,968,963	1,404,182	+ 564,781	19,589,296	13.9
1942	19,589,296			1,618,925	260,051	1,878,976	1,385,479	+ 493,497	20,082,793	14.5
1943	20,082,793			1,202,368	282,418	1,484,786	1,503,427	— 18,641	20,064,152	13.3
1944	20,064,152			1,556,192	511,308	2,067,500	1,678,421	+ 389,079	20,453,231	12.2
1945	20,453,231	+ 248,891	1,441,424	1,690,315	419,984	2,110,299	1,736,717	+ 373,582	20,826,813	12.0
Crude Oil Only:										
1945	19,784,530					1,870,971	1,713,655	+ 157,316	19,941,846	11.6
1946	19,941,846	+1,254,705	1,158,923	2,413,628	244,434	2,658,062	1,726,348	+ 931,714	20,873,560	12.1
1947	20,873,560	+ 749,278	1,269,862	2,019,140	445,430	2,464,570	1,850,445	+ 614,125	21,487,685	11.6
1948	21,487,685	+1,958,853	1,439,873	3,398,726	396,481	3,795,207	2,002,448	+1,792,759	23,280,444	11.6
1949	23,280,444	+ 603,566	1,693,862	2,297,428	890,417	3,187,845	1,818,800	+1,369,045	24,649,489	13.6
1950	24,649,489	+ 663,378	1,334,391	1,997,769	564,916	2,562,685	1,943,776	+ 618,909	25,268,398	13.0
1951	25,268,328	+1,776,110	2,248,588	4,024,698	389,256	4,413,954	2,214,321	+2,199,633	27,468,031	12.4
1952	27,468,031	+ 743,729	1,509,131	2,252,860	496,428	2,749,288	2,256,765	+ 492,523	27,960,554	12.4
1953	27,960,554	+1,264,832	1,439,618	2,704,450	591,680	3,296,130	2,311,856	+ 984,274	28,944,828	12.5
1954	28,944,828	+ 537,788	1,749,443	2,287,231	585,806	2,873,037	2,257,119	+ 615,918	29,560,746	13.1
1955	29,560,746	+ 696,114	1,697,653	2,393,767	476,957	2,870,724	2,419,300	+ 451,424	30,012,170	12.4
1956	30,012,170	+804,803	1,702,211	2,507,114	467,222	2,974,336	2,551,857	+ 422,479	30,434,649	11.9
Natural Gas Liquids:										
1946	.....	.....	.....	.....	.....	.....	.....	.....	3,163,219	.....
1947	3,163,219	.....	.....	192,237	59,301	251,538	160,782	+ 90,756	3,253,975	20.2
1948	3,253,975	.....	.....	405,874	64,683	470,557	183,749	+ 286,808	3,540,783	19.3
1949	3,540,783	.....	.....	294,211	92,565	386.776	198,547	+ 188,229	3,729,012	18.8
1950	3,729,012	.....	.....	707,879	58,183	766,062	227,411	+ 538,651	4,267,663	18.8
1951	4,267,663	.....	.....	648,497	75,494	723.991	267,052	+ 456,939	4,724,602	17.7
1952	4,724,602	.....	.....	475,170	81,668	556,838	284,789	+ 272,049	4,996,651	17.5
1953	4,996,651	.....	.....	648,047	95,922	743,969	302,698	+ 441,271	5,437,922	18.0
1954	5,437,922	.....	.....	20,830	86,520	107.350	300,815	— 193,465	5,244,457	17.4
1955	5,244,457	.....	.....	447,160	67,348	514,508	320,400	+ 194,108	5,438,565	17.0
1956	5,438,565	.....	.....	715,764	94,056	809,820	346,053	+ 463,767	5,902,332	17.1
Total Liquid Hydrocarbons:										
1946	.....	.....	.....	.....	.....	.....	.....	.....	24,036,779	.....
1947	24,036,779	.....	.....	2,211,377	564,731	2,716,108	2,011,227	+ 704,881	24,741,660	12.3
1948	24,741,660	.....	.....	3,804,600	461,164	4,265.764	2,186,197	+2,079,567	26,821,227	12.3
1949	26,821,227	.....	.....	2,591,639	982,982	3,574,621	2,017,347	+1,557,274	28,378,501	14.1
1950	28,378,501	.....	.....	2,705,648	623,099	3.328,747	2,171,187	+1,157,560	29,536,061	13.6
1951	29,536.061	.....	.....	4,673,195	464,750	5,137,945	2,481,373	+2,656,572	32,192,633	13.0
1952	32,192,633	.....	.....	2,728,030	578,096	3,306.126	2,541,554	+ 764,572	32,957,205	13.0
1953	32,957,205	.....	.....	3,352,497	687,602	4,040,099	2,614,554	+1,425,545	34,382,750	13.2
1954	34,382,750	.....	.....	2,308,061	672,326	2,980,387	2,557,934	+ 422,453	34,805,203	13.6
1955	34,805,203	.....	.....	2,840,927	544,305	3,385,232	2,739,700	+ 645,532	35,450,735	13.0
1956	35,450,735	.....	.....	3,222,878	561,278	3,784.156	2,897,910	+ 886,246	36,336,981	12.5

* Production for 1936 and previous years from U. S. Bureau of Mines: production for 1937 and each subsequent year compiled by API (and AGA) committees on basis of 11 months actual and December estimated. Small variance of these figures from actual production as later reported is compensated by revision when reserves report for succeeding year is compiled.

† During years 1857-1899. ‡ Based on production of 57,071 thousand barrels in 1899.



7 states contain most of U.S. liquid hydrocarbon reserves

AT THE BEGINNING of 1957, 91.4 percent of all U. S. liquid hydrocarbon reserves were located in Texas, Louisiana, California, Oklahoma, Wyoming, Kansas and New Mexico. Total reserves in these states: 33.2 billion barrels, 711 million more than were reported in 1955.

Of that total increase, crude oil accounted for only 233 million barrels (less than 1 percent increase over 1955), while natural gas liquids increased 8.4 percent (478 million barrels).

Report By States. Texas' 18.2 billion barrels of liquid hydrocarbons at the start of 1957 accounted for 50.1 percent of the U. S. total, nearly four times more than the second ranking state.

Texas reserves consisted of 14.8 billion barrels of crude oil at the beginning of 1957, 210 million barrels less than at the start of 1956. During the same period, the state's natural gas liquids reserves increased 335 million barrels to 3.4 billion.

Louisiana had the second largest volume of proved unproduced reserves among the states—4.7 billion barrels. Crude oil reserves increased 420 million barrels for a new total of 3.7 billion at the start of 1957, and the state's natural gas liquids reserves increased 79 million barrels to 1 billion.

California followed closely behind Louisiana with 4.1 billion barrels of liquid hydrocarbon reserves.

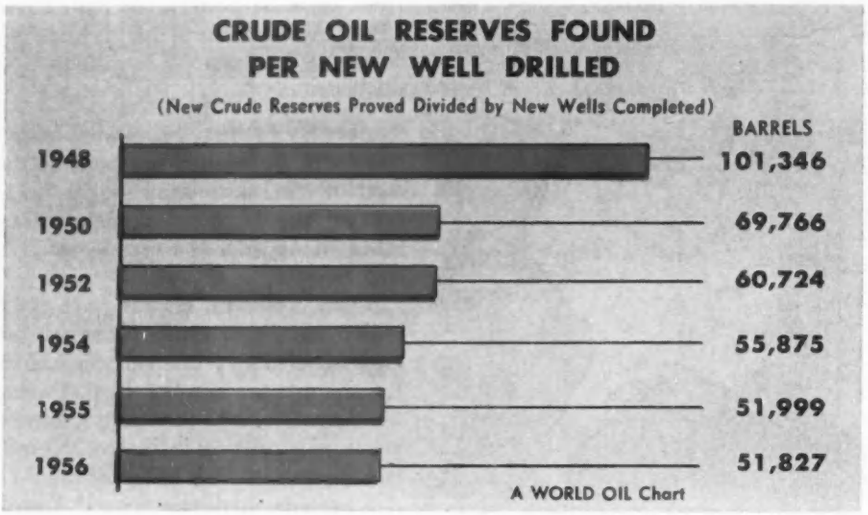
Estimated Proved Reserves of Crude Oil, Natural Gas Liquids and Total Liquid Hydrocarbons in U. S., by States, at Beginning of 1957

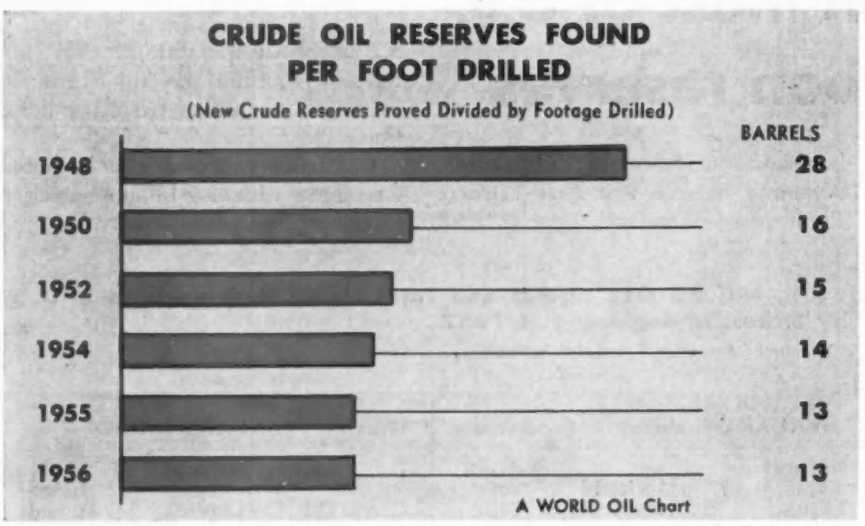
(Source: American Petroleum Institute)
(THOUSANDS OF BARRELS)

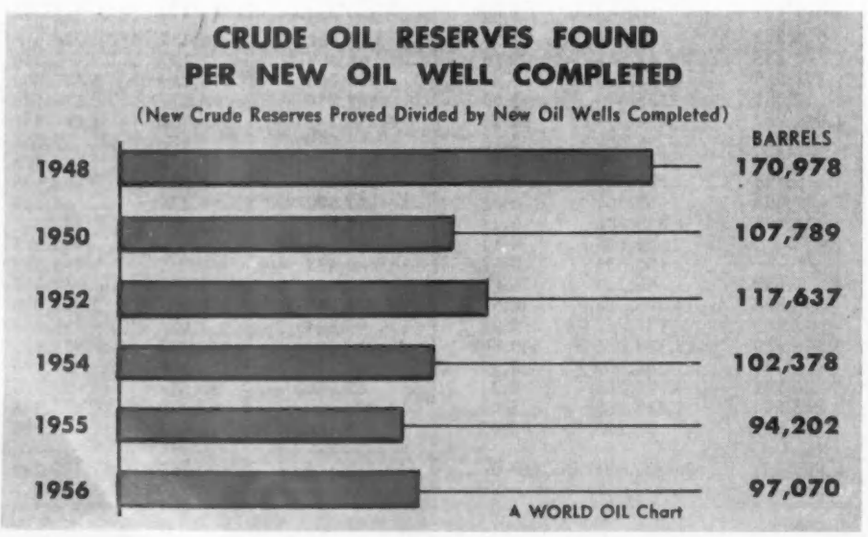
	JANUARY 1, 1957				JANUARY 1, 1956		
STATE	Crude Oil	Natural Gas Liquids	Total Liquid Hydrocarbons	Percent of U.S.	Crude Oil	Natural Gas Liquids	Total Liquid Hydrocarbons
Alabama	37,537	*	37,537	0.10	20,604	*	20,604
Arkansas	317,726	42,467	360,193	0.99	329,539	45,124	374,663
California	3,771,357	311,728	4,083,085	11.24	3,801,408	324,941	4,126,349
Colorado	363,750	11,545	375,295	1.03	334,003	12,511	346,514
Illinois	700,000	16,772	716,772	1.97	691,161	18,457	709,618
Indiana	67,728	133	67,861	0.19	61,458	132	61,590
Kansas	992,211	171,615	1,163,826	3.20	998,068	173,236	1,171,304
Kentucky	148,442	7,251	155,693	0.43	107,454	8,675	116,129
Louisiana	3,675,419	1,014,942	4,690,361	12.91	3,255,287	935,950	4,191,237
Michigan	55,312	1,068	56,380	0.15	58,889	872	59,761
Mississippi	368,205	56,003	424,208	1.17	387,702	57,876	445,578
Montana	331,414	8,145	339,559	0.93	298,948	6,857	305,805
Nebraska	62,861	6,054	69,365	0.02	57,697	6,436	64,133
New Mexico	835,437	414,099	1,249,536	3.43	819,658	342,207	1,161,865
New York	40,196	.....	40,196	0.12	42,943	.....	42,943
North Dakota	195,834	*	195,834	0.53	185,532	*	185,532
Ohio	63,575	1,669	65,244	0.18	56,000	1,557	57,557
Oklahoma	2,009,798	355,588	2,365,386	6.51	2,016,045	354,354	2,370,399
Pennsylvania	134,700	3,167	137,867	0.38	93,344	3,024	96,368
Texas	14,783,139	3,379,889	18,163,028	49.99	14,933,502	3,045,361	17,978,863
Utah	61,435	95	61,530	0.17	37,112	108	37,220
West Virginia	51,221	26,741	77,962	0.21	47,000	30,526	77,526
Wyoming	1,363,164	53,874	1,417,038	3.90	1,373,630	50,348	1,423,978
*Miscellaneous	4,188	19,037	23,225	0.07	5,186	20,013	25,199
Total United States	30,434,649	5,902,332	36,336,981	100.0	30,012,170	5,438,565	35,450,735

*Miscellaneous includes: Crude in Fla., Mo., Nev., S.D., Tenn., Va.; Natural Gas Liquids in Ala., Fla., N.D.

Less oil is being found in ratio to drilling







Development of new crude oil reserves in relationship to the U. S. drilling effort has fluctuated considerably during recent years.

In 1956, the proving of almost 3 billion barrels of new crude oil reserves was equal to only 51,827 barrels per total new well drilled in search of production, 13 barrels for each foot drilled and 97,070 barrels per new oil well completed during the year.

Data are not yet available for 1957 because the American Petroleum Institute Reserves committee has not yet published reserves figures for the year.

By comparison, almost 2.9 billion barrels of new oil reserves were proved during 1955. However, this was equivalent to only 51,999 barrels per total new well drilled in search of production, 13 barrels for each foot of hole drilled, and 94,202 barrels per new oil well completion recorded during the year.

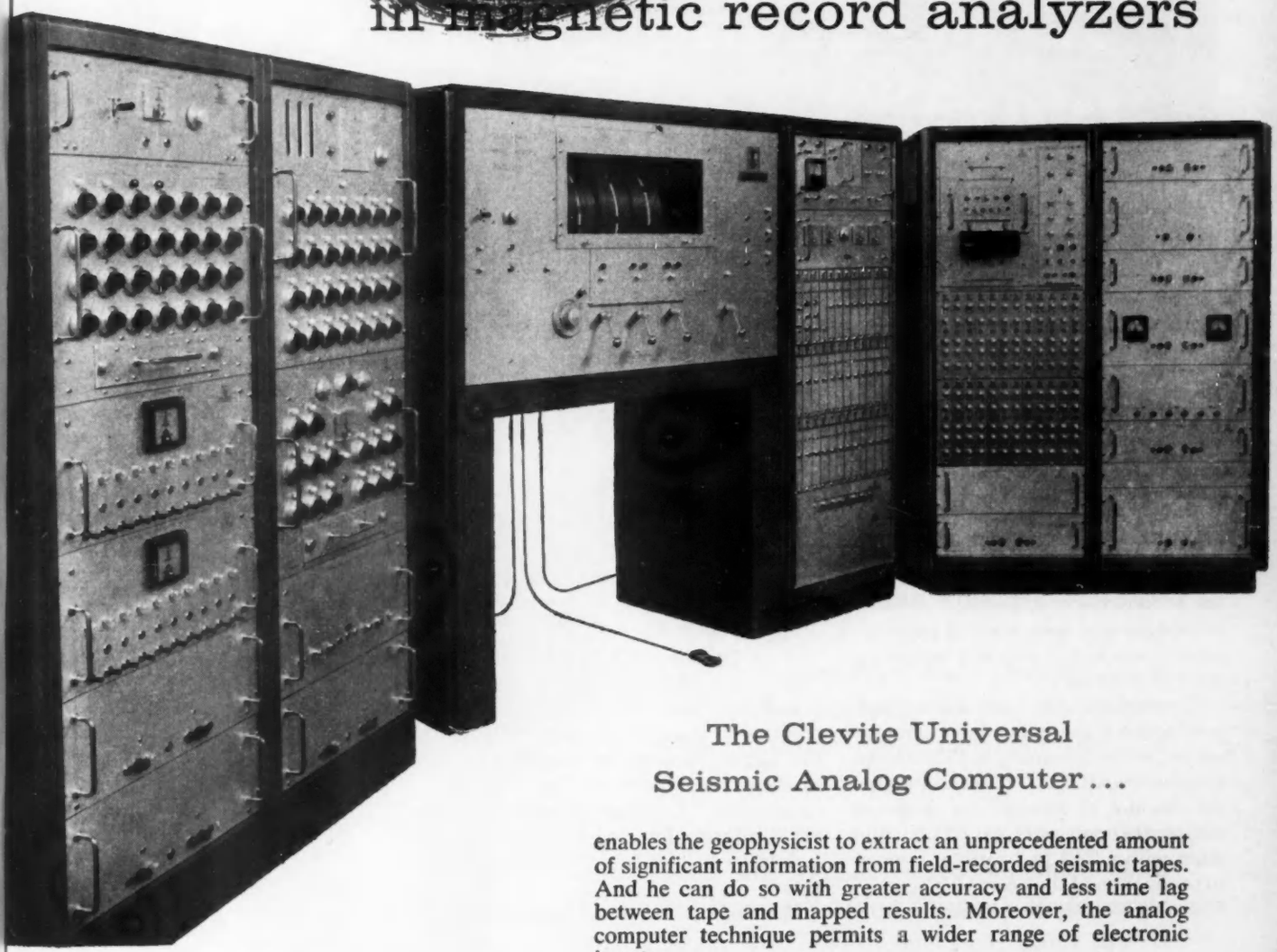
The highest relationship of new crude oil reserves found to drilling activity since the 1937-1941 period occurred in 1948 and 1951. In 1948, almost 3.8 billion barrels of new oil reserves were proved, representing 101,346 barrels for each well drilled in search of production.

Crude Oil Reserves Developed in U. S. in Relationship to Drilling Effort

	Barrels Per Total Well Drilled	Barrels Per Foot Drilled	Barrels Per Oil Well Drilled
1937-1941	89,171	28	131,173
1942-1946	86,815	25	154,670
1947.....	79,287	22	139,929
1948.....	101,346	28	170,978
1949.....	84,308	23	148,860
1950.....	60,766	16	107,789
1951.....	99,032	25	187,572
1952.....	60,724	14	117,637
1953.....	68,325	17	130,535
1954.....	55,875	14	102,378
1955.....	51,999	13	94,202
1956.....	51,827	13	97,070

Total wells drilled include all new wells drilled in search of production and completed as oil, gas, distillate or dry holes. Oil wells drilled include all new wells completed as producing oil wells during the year.

Clevite offers flexibility hitherto unknown in magnetic record analyzers



The Clevite Universal Seismic Analog Computer...

enables the geophysicist to extract an unprecedented amount of significant information from field-recorded seismic tapes. And he can do so with greater accuracy and less time lag between tape and mapped results. Moreover, the analog computer technique permits a wider range of electronic inputs.

The computer continuously derives variable and fixed corrections and inserts these corrections in field data simultaneously. Time or depth scaled records may be run off with all corrections made. Compositing by pairs, to eight pairs, may be accomplished using raw or corrected tapes from the same or different shot points. Flexible filtering or mixing combinations are available.

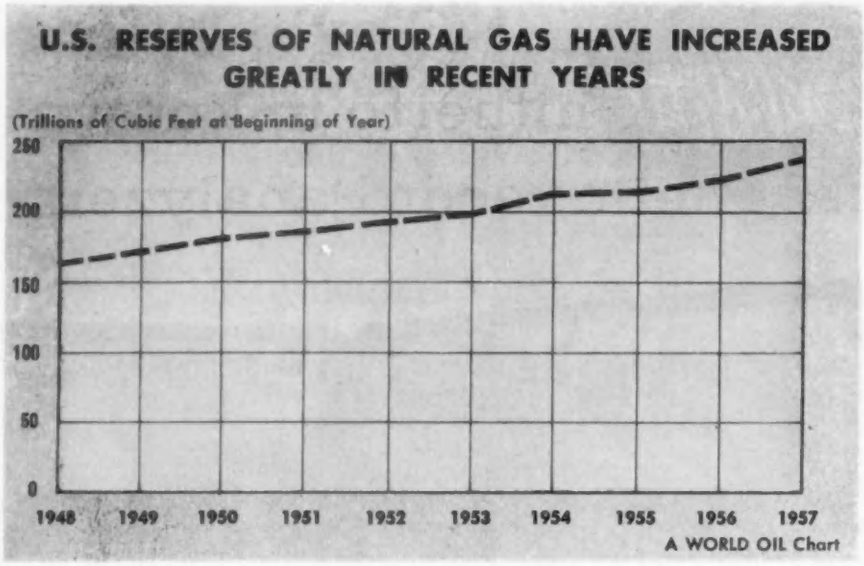
The Clevite (MRA-2) Computer combines the best features and accuracy of analog computation with the most flexible servo mechanization. Ask for literature and a demonstration.

Clevite Texas Division joins the parent company, in a continuing program of research and development in geophysical instrumentation. The MRA-2 Computer is the first of a comprehensive line of new products. A tape transport for mobile use is another; transistorized power supplies are a third. Development will continue throughout the present lines of seismometers, amplifiers and modular recorders. Clevite Texas Division is a good name to remember.

CLEVITE CORPORATION

TEXAS DIVISION

3732 Westheimer Rd., Houston, Texas



Ratio of U.S. gas reserves to production is declining

THE U. S. NATURAL gas industry continues to set new records in discovery of new reserves. Even so, demand is increasing at such a rapid pace, the production rate is steadily outpacing gains in reserves.

Consequently, the ratio of reserves to production is declining. To give an example, at the beginning of 1957 known gas reserves were 21.7 times larger than the amount of natural gas produced during the previous year. This compares with a 22.1 to 1 ratio of reserves to production at the beginning of 1957. These two ratios show a marked decline from the 26.9 to 1 ratio at the start of 1951, and 32.5 to 1 at the beginning of 1947.

At the beginning of 1957 the U.S. had an estimated 237.8 trillion cubic feet of proved natural gas reserves—14 trillion cubic feet more than were reported at the start of 1956. This was the largest increase in total reserves since the end of World War II. In comparison, U.S. reserves totaled only 193.8 trillion cubic feet five years ago, and 160.6 trillion cubic feet ten years ago.

Reserve figures for the beginning of 1958 are not yet available. The Reserve Committee of the American Gas Association does not release its annual report until March.

However, another sizable gain in total gas reserves is expected in 1957, though the increase will not be as spectacular as the total recorded during the previous year.

Reserve Outlook Is Bright. Record discovery rates in recent years indicate the ability of the industry to continue to find large volumes of additional reserves, provided producers are allowed the necessary incentives.

The discovery of 24.9 trillion cubic feet of new natural gas reserves during 1956 marked the largest single discovery year in history. Also, more new gas was found during the past five years than ever before. During the 1952-1956 period, 91.2 trillion cubic feet of new natural gas reserves were discovered.

In the preceding five-year period, 1947-51, new reserve discoveries totaled only 65.7 trillion cubic feet.

Changes in U. S. Reserves of Natural Gas, by Years, Since 1945

Source: AGA . . . Data in millions of cubic feet, 14.65 psi at 60° F.

YEAR	Estimated Proved Reserves Beginning of Year	CHANGES IN RESERVES DURING YEAR (Add.) Reserves Proved: Extensions and Revisions	Discoveries of New Fields and New Pools in Old Fields	Total Reserves Proved During Year (Cols.2+3)	(Add or Deduct) Net Change in Storage	(Deduct) Net Production During Year	(Net Change) Increase or Decrease (Cols. 4+ 5—6)	Estimated Proved Reserves End of Year (Cols. 1+7)	Ratio of Year-End Reserves to Year's Prod. (Year's Supply) Col. 8+ Col. 6
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1945	.....	.....	.....	.....	.....	.....	.....	147,789,367	....
1946	147,789,367	.....	.....	17,729,152	*	4,942,617	+12,786,535	160,575,901	32.5
1947	160,575,901	7,570,654	3,410,170	10,980,824	*	5,629,811	+ 5,351,013	165,926,914	29.5
1948	165,926,914	9,769,483	4,129,089	13,898,572	+ 51,482	6,007,628	+ 7,942,426	173,869,340	28.9
1949	173,869,340	8,061,429	4,612,870	12,674,299	+ 82,746	6,245,041	+ 6,512,004	180,381,344	28.9
1950	180,381,344	9,172,381	2,877,351	12,049,732	+ 54,301	6,892,678	+ 5,211,355	185,592,699	26.9
1951	185,592,699	13,013,606	3,039,385	16,052,991	+132,751	7,966,941	+ 8,218,801	193,811,500	24.3
1952	193,811,500	8,934,470	5,411,043	14,345,513	+198,850	8,639,638	+ 5,904,725	199,716,225	23.1
1953	199,716,225	13,371,355	7,081,661	20,453,016	+516,431	9,238,540	+11,730,907	211,447,132	22.9
1954	211,447,132	4,632,309	4,966,894	9,599,203	+ 90,906	9,426,509	+ 263,600	211,710,732	22.5
1955	211,710,732	16,298,125	5,719,069	22,017,194	+ 87,637	10,118,118	+11,986,713	223,697,445	22.1
1956	223,697,445	19,214,604	5,636,476	24,851,080	133,970	10,907,926	14,077,124	237,774,569	21.7

* Not estimated.

Estimates of Proved Reserves of Natural Gas in U. S., by Years, Since 1918

(Production from Bureau of Mines)

YEAR	Reserves End of Year (Billion Cubic Feet)	Authority for Estimate of Reserves	Net Production (Billion Cubic Feet)	Ratio Reserve to Annual Prod.
1918	15,000	E. Holley Poe[1]	721	20.8
1919	15,000	" "	746	20.1
1920	15,000	" "	798	18.8
1921	15,000	" "	662	22.7
1922	15,000	" "	763	19.7
1923	15,000	" "	1,007	14.9
1924	15,000	" "	1,142	13.1
1925	23,000	*Gas Facts*[2]	1,189	19.3
1926	23,000	" "	1,313	17.5
1927	23,000	" "	1,445	15.9
1928	23,000	" "	1,568	14.7
1929	23,000	" "	1,918	12.0
1930	46,000	Earl P. Hines[3]	1,943	23.7
1931	46,000	" "	1,686	27.3
1932	46,000	" "	1,556	29.6
1933	46,000	" "	1,555	29,6
1934	62,000	Ralph E. Davis[4]	1,771	35.0
1935	62,000	" "	2,408	25.7
1936	62,000	" "	2,571	24.1
1937	66,000	" "	2,854	23.1
1938	70,000	Lyon F. Terry[5]	2,960	23.6
1939	70,000	" "	3,162	22.1
1940	85,000	Ralph E. Davis[4]	3,331	25.5
1941	113,800	P.A.W.[6]	3,459	32.9
1942	110,000	"	3,701	29.7
1943	110,000	"	4,336	25.4
1944	133,500	"	4,731	28.2
1945	147,789	A.G.A.[7]	4,840	30.5
1946	160,576	"	4,943	32.5
1947	165,927	"	5,630	29.5
1948	173,869	"	6,008	28.9
1949	180,381	"	6,245	28.9
1950	185,593	"	6,893	26.9
1951	193,811	A.G.A.[7]	7,967	24.3
1952	199,716	"	8,640	23.1
1953	211,447	"	9,239	22.9
1954	211,711	"	9,427	22.5
1955	223,697	"	10,118	22.1
1956	237,775	"	10,908	21.7

[1] And Associates, New York, in report September 23, 1947. [2] American Gas Association yearbook, 1945 and 1946. [3] Then with Cities Service Co., New York. [4] Consulting Engineer, Houston. [5] Of Chase National Bank, New York. [6] Petroleum Administration for War. [7] American Gas Association.

NOW a Cone-Type Rock Bit is included in the HAWTHORNE "*Blue Demon*" LINE!

a COMPLETE LINE of bits for all soft-medium-hard formation drilling

A Cone-Type Rock Bit . . . for Oil and Minerals Exploration and Quarry Blast Hole Drilling . . . is now included in the Hawthorne "Blue Demon" *All-Formation* drill bit line.

Designed for drilling harder formations than are regularly recommended with the patented "Blue Demon" Replaceable Blade Bits, the Cone-Type Rock Bit is available from authorized Hawthorne dealers in 3⅞", 4¼", 4½", 4¾" and 5⅝" sizes.

Consistently priced, wherever you go, ask for Hawthorne Bits for all your drilling requirements.

WRITE FOR ILLUSTRATED CATALOG

HERB J. HAWTHORNE INC.

P. O. Box 7366 • Houston 8, Texas • Cable Address: HAWBIT

* Not estimated.

Association.

Six states have 90 percent of gas reserves

WITH THE exception of a few new areas entering the picture on a minor scale, location of natural gas reserves has shown little change in recent years.

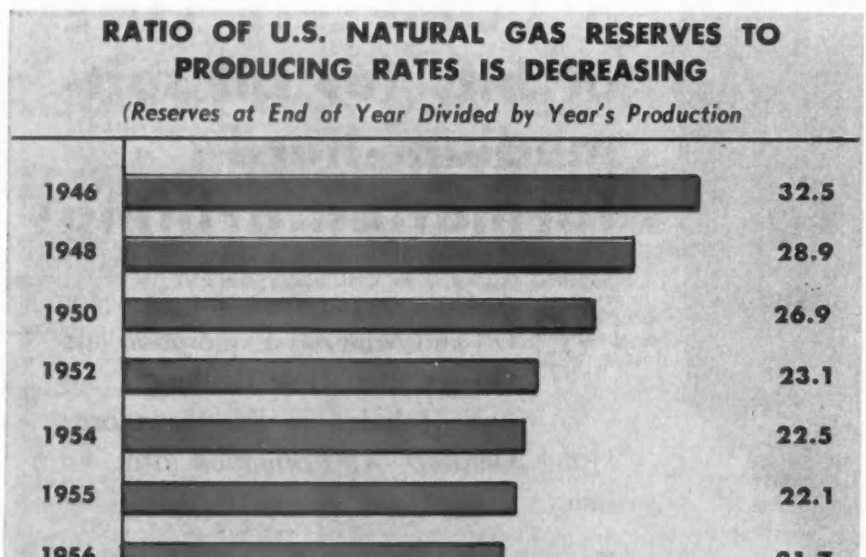
Six states—Texas, Louisiana, New Mexico, Kansas, Oklahoma and California—still account for more than 90 percent of total U. S. gas reserves. And more than half of that total is located in Texas. Seventeen other states account for the remaining U. S. reserves.

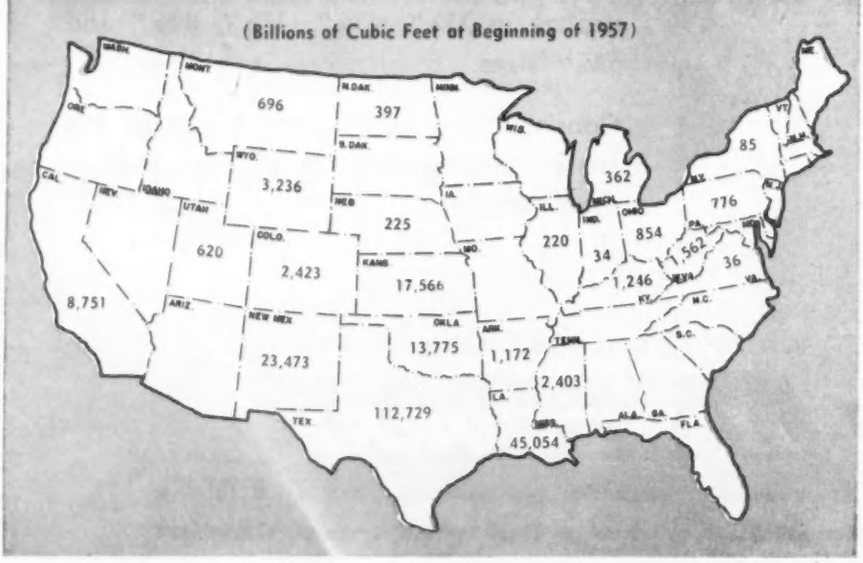
Report by States. At the start of 1957, Texas had 112.7 trillion cubic feet of natural gas reserves, more than twice the reserves of the next highest state. And that total accounted for 47.4 percent of all the U. S. gas reserves.

Louisiana had the second largest amount of reserves—45 trillion cubic feet, nearly 19 percent of the U. S. total. New Mexico was the third ranking state with 23.5 trillion cubic feet, 9.9 percent of the national total.

The remaining states reported the following total reserves at the beginning of 1957: Kansas, 17.6 trillion cubic feet, 7.4 percent of the U. S. total; Oklahoma, 13.8 trillion cubic feet, 5.8 percent; California, 8.8 trillion cubic feet, 3.6 percent.

The other 17 states reported a total of 16.6 trillion cubic feet of reserves, about 7 percent of the U. S. total.





Estimated Proved Reserves of Natural Gas in U. S., by States, at Beginning of 1957

(Source: AGA . . . Millions of Cubic Feet—14.65 psia, at 60 Deg. F)

STATE	Amount	% of U.S.
Arkansas	1,171,527	0.49
*California	8,751,233	3.68
Colorado	2,422,769	1.02
Illinois	219,705	0.09
Indiana	33,772	0.02
Kansas	17,566,257	7.38
Kentucky	1,245,602	0.53
*Louisiana	45,053,999	18.94
Michigan	361,786	0.16
Mississippi	2,403,326	1.01
Montana	696,351	0.29
Nebraska	225,402	0.10
New Mexico	23,472,707	9.87
New York	85,249	0.03
North Dakota	397,493	0.17
Ohio	853,607	0.36
Oklahoma	13,775,049	5.79
Pennsylvania	776,212	0.33
*Texas	112,728,750	47.41
Utah	619,786	0.26
Virginia	35,557	0.01
West Virginia	1,561,737	0.66
Wyoming	3,235,932	1.36
†Miscellaneous	80,761	0.04
Total U.S.	237,774,569	100.0

* Includes off-shore reserves.

† Includes Ala., Ariz., Fla., Md., Mo.

Gas discovery-drilling ratio increases again

FOR THE SECOND straight year, an increasing amount of new natural gas reserves were developed in the U.S. in 1956 in proportion to drilling activity.

During 1956 a total of 24 trillion cubic feet of new natural gas reserves was discovered. This represents 433 million cubic feet of new reserves for each new well drilled—34 million cubic feet more than in 1955. Also, 707 million cubic feet of new reserves was found in 1956 for each new productive well that was completed, 71 million cubic feet more than in 1955.

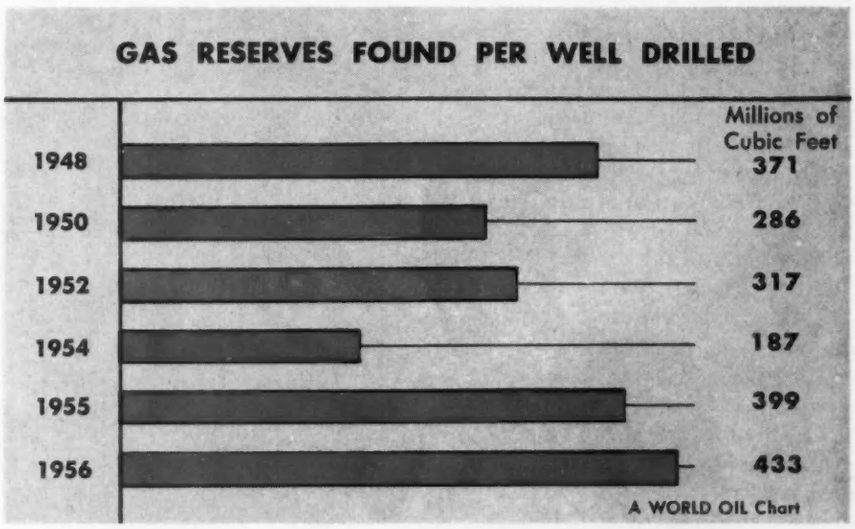
With these increases the amount of new gas reserves developed during 1956 averaged 10,000 cubic feet more for each foot of hole drilled, as compared with 1955. During that year, an average of 100,000 cubic feet of new reserves were found for each foot of hole drilled. The average was 110,000 cubic feet in 1956.

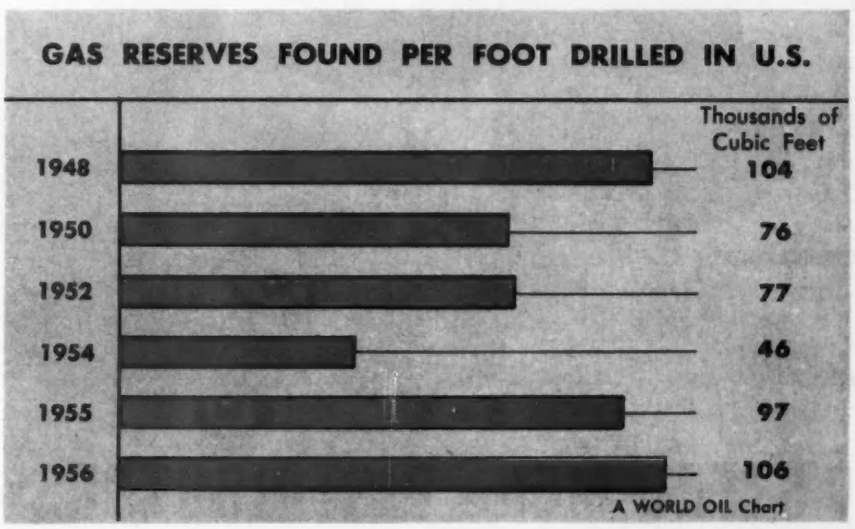
The 1955 record was even more impressive in respect to increases. During that year, the new reserves per well drilled averaged 399 million cubic feet, 212 million cubic feet more than the previous year; 636 million cubic feet of gas were found for each new productive well completion, 339 million cubic feet more than in 1954; and the average of 100,000 cubic feet of new reserves for each foot of hole drilled was twice the 50,000 cubic feet reported during the previous year.

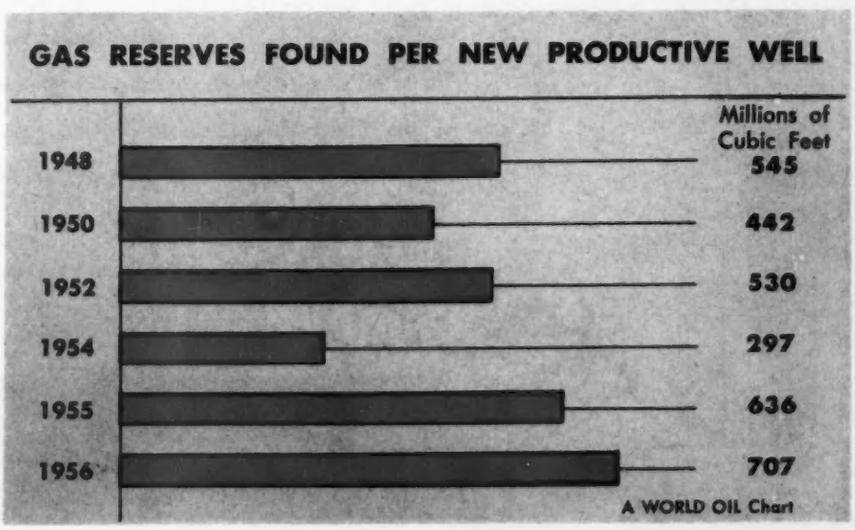
Natural Gas Reserves Developed Annually in U. S. in Relationship to Drilling Effort

YEAR	Millions of Cu. Ft. Per Well Drilled	Millions of Cu. Ft. Per Foot Drilled	Millions of Cu. Ft. Per Productive Well
1946	630	0.18	902
1947	353	0.10	515
1948	371	0.10	545
1949	335	0.09	509
1950	286	0.08	442
1951	360	0.09	593
1952	317	0.08	530
1953	424	0.10	694
1954	187	0.05	297
1955	399	0.10	636
1956	433	0.09	707

Wells drilled include all wells drilled in search of production and completed as oil, gas, distillate and dry holes. Productive wells includes all wells completed in year as oil, gas or distillate producers.







PARTNERS IN PROGRESS

STEEL MEN - DISTRIBUTORS - OIL MEN . . .

Three men play a vital role in our country's progress: steel men who produce oil country pipe, distributors who sell it, - - gas and oil men who use pipe. These three experts provide the nation with vital fuels and many other useful products of the petroleum industry. YOUNGSTOWN steel men, their distributors, and oil men - - partners in progress, contributing toward an even greater standard of living!

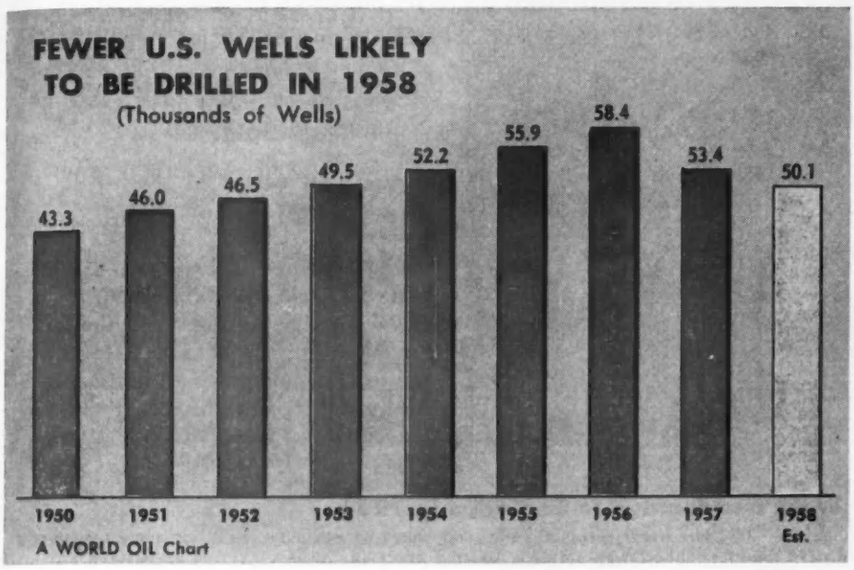
QUALITY YOUNGSTOWN SERVICE

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel

Youngstown 1, Ohio

Drilling Section



50,137 new wells forecast, down 6 percent from 1957

By Warren L. Baker, Editorial Director
and Cecil W. Smith, Statistical Editor, WORLD OIL

U. S. DRILLING activity slumped sharply in 1957, and the general unhealthy conditions of the industry are expected to lead to a substantial additional decrease during 1958.

WORLD OIL's annual drilling survey, made with the aid of information received from oil companies, forecasts the drilling of 50,137 new wells in the U. S. and 207,800,000 feet of hole during 1958.

This would be 3213 fewer wells or 6 percent less than the 53,350 wells drilled in 1957, and 8281 wells or 15 percent under the peak of 1956 when 58,418 wells were drilled.

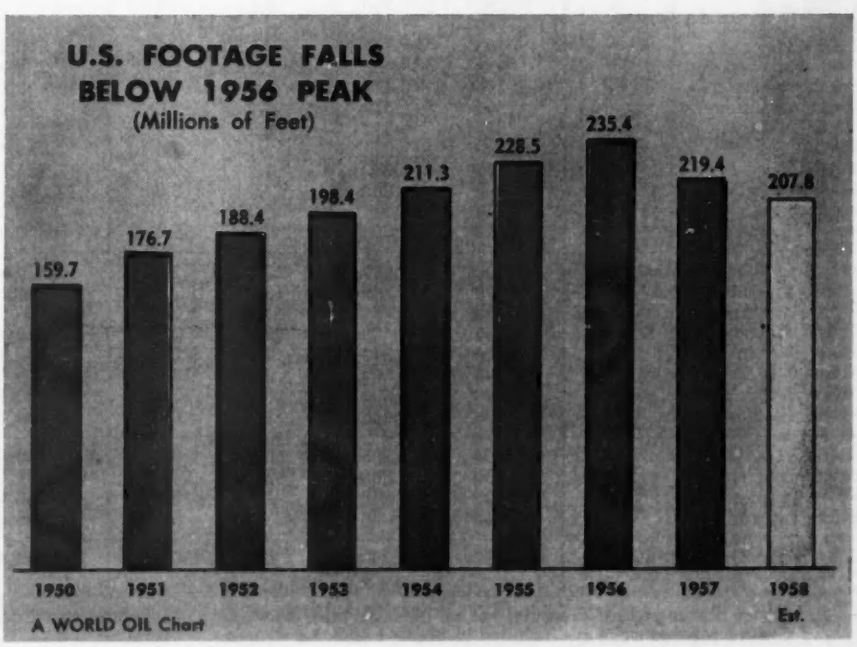
Footage is seen as declining by 11,604,228 feet from the 219,404,228 feet drilled in 1957, a decrease of 5.3 percent. The forecast calls for 27,586,441 less footage to be drilled than the peak of 235,386,441 feet drilled in 1956, a decline of 11.7 percent. The drop in footage will be smaller than in wells because of greater average depth per completion.

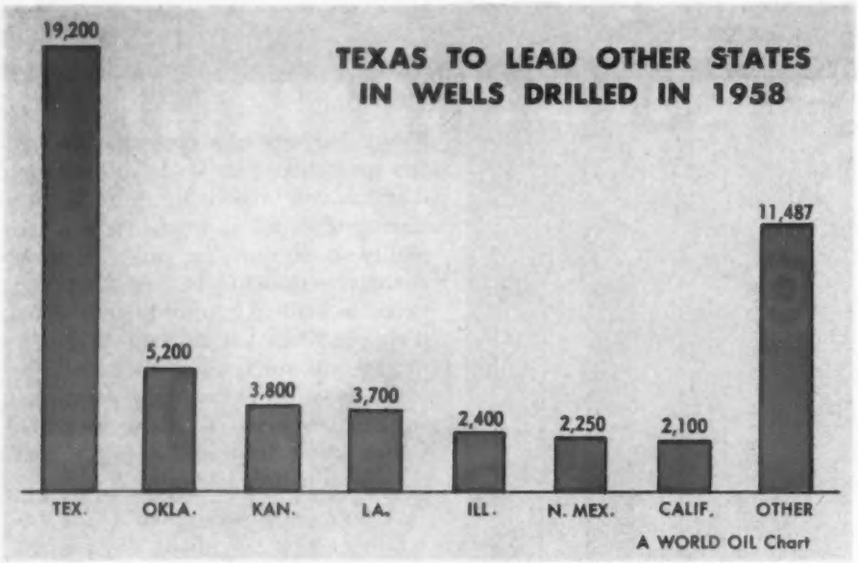
The decline in drilling activity during 1957 was the first year since World War II in which U. S. drilling failed to register a substantial gain. Nevertheless, the 1958 forecast calls for more U. S. wells and footage to be drilled than in any year prior to 1954.

Many factors are responsible for the indication that U. S. drilling operations will experience a reduction during 1958. Chief among these is the ability to produce far more oil than current requirements, reducing the need for drilling new additional wells. This condition has resulted in drastic production restrictions, such as prorated wells in Texas being permitted to produce only 12 days monthly. Other states have reduced per well daily production allowables.

A temporary slow-down in the addition of new producing wells is desirable so that gains in consumption will bring demand more closely in line with producing ability. This becomes highly desirable in view of prospects that relative little growth will occur in the consumption of U. S. oils during 1958. Increased domestic consumption probably will merely offset anticipated losses in export shipments, which will drop sharply because of heavy emergency shipments made to Western Europe during the Suez Canal crisis in 1957.

Although the government's program for restricting crude oil imports should keep imports below mid-1957 peaks, imports for the year 1958 are likely to be about the same as during the full year 1957. Because of the desirability that excessive inventories of re-





fined oil products be reduced, prospects are that the U. S. will produce less oil in 1958 than in 1957.

This means less income from production operations. Profits are likely to be further curtailed by the pinch of higher equipment and wage costs. Hence, producers will curtail their expenditures for new wells.

Gains will occur in several states, despite the decline in total U. S. drilling.

New Mexico is expected to complete 2250 new wells in 1958, an increase of 2.6 percent over the 2192 completions in 1957. The state's drilling in 1957 compared with 1967 wells during 1956. New Mexico footage is seen as rising from 10,354,453 feet in

Forecast of Wells and Footage to Be Drilled in 1958

Forecast covers all new wells to be drilled for oil or gas in 1958, salt water disposal wells, and water or gas-input wells for repressuring and secondary recovery, but does not estimate old wells drilled deeper.

STATE or DISTRICT	TOTAL NEW WELLS				FOOTAGE (New Wells)			
	Forecast For 1958	Drilled In 1957	% Diff. '57-'58	% of U. S. 1958	Forecast For 1958	Drilled In 1957	% Diff. '57 '58	% of U. S. 1958
Alabama	55	94	— 41.5	0.1	440,000	790,240	— 44.3	0.2
Arizona	2	2	.....	...	5,000	4,505	+ 11.0	0.0
Arkansas	1,000	1,104	— 9.4	2.0	3,100,000	3,371,923	— 8.1	1.5
California	2,100	2,253	— 6.8	4.2	9,000,000	9,678,046	— 7.0	4.3
Colorado	800	815	— 1.8	1.6	4,200,000	4,267,074	— 1.6	2.0
Florida	5	9	— 44.4	..	35,000	61,732	— 43.3	0.0
Illinois	2,400	2,590	— 7.3	4.8	5,520,000	5,928,958	— 6.9	2.7
Indiana	700	718	— 2.5	1.4	1,200,000	1,211,411	— 1.0	0.6
Kansas	3,800	4,222	— 10.0	7.6	13,750,000	14,995,879	— 8.3	6.6
Kentucky	1,900	1,763	+ 7.8	3.8	2,700,000	2,541,186	+ 6.2	1.3
Louisiana	3,700	3,772	— 1.9	7.4	29,000,000	29,746,194	— 2.5	13.9
North Louisiana	1,400	1,433	— 2.3	2.8	5,000,000	5,234,383	— 4.5	2.4
South Louisiana	2,300	2,339	— 1.7	4.6	24,000,000	24,511,811	— 2.1	11.5
[1]Gulf of Mexico	600	648	— 7.4	1.2	5,750,000	6,176,558	— 6.9	2.8
Michigan	450	419	+ 7.4	0.9	1,250,000	1,196,801	+ 4.4	0.6
Mississippi	450	390	+ 15.4	0.9	3,375,000	2,897,555	+ 16.5	1.6
Missouri	10	10	.....	..	10,000	7,647	+ 30.8	0.0
Montana	400	429	— 6.8	0.8	2,000,000	2,143,462	— 6.7	1.0
Nebraska	875	893	— 2.0	1.7	5,200,000	5,297,998	— 1.9	2.5
New Mexico	2,250	2,192	+ 2.6	4.5	10,800,000	10,354,453	+ 4.3	5.2
New York	500	519	— 3.7	1.0	775,000	813,500	— 4.7	0.4
North Dakota	350	312	+ 12.2	0.7	2,375,000	2,120,326	+ 12.0	1.1
Ohio	1,000	1,011	— 1.1	2.0	2,400,000	2,423,755	— 1.0	1.2
Oklahoma	5,200	5,663	— 8.2	10.4	17,800,000	19,419,287	— 8.3	8.6
Pennsylvania	1,000	1,022	— 2.2	2.0	2,600,000	2,649,658	— 1.9	1.3
South Dakota	25	41	— 39.0	..	85,000	140,675	— 39.6	0.0
Texas	19,200	21,290	— 9.8	38.3	82,050,000	90,102,965	— 8.9	39.5
Dist. 1: South Central	1,000	1,255	— 20.3	2.0	2,600,000	3,253,106	— 20.1	1.3
Dist. 2: Middle Gulf	800	760	+ 5.3	1.6	4,800,000	4,607,353	+ 4.2	2.3
Dist. 3: Upper Gulf	1,400	1,644	— 14.9	2.8	9,150,000	10,763,881	— 15.0	4.4
Dist. 4: Lower Gulf-S.W.	1,400	1,426	— 1.8	2.8	7,400,000	7,531,685	— 1.8	3.6
Dist. 5 & 6: East	1,300	1,249	+ 4.1	2.6	6,300,000	6,587,178	— 4.4	3.0
Dist. 7-B & 9: North	6,600	7,304	— 9.6	13.2	19,800,000	21,338,545	— 7.2	9.5
Dist. 7-C & 8: West	5,700	6,202	— 8.1	11.4	27,900,000	30,120,282	— 7.4	13.4
Dist. 10: Panhandle	1,000	1,450	— 31.0	2.0	4,100,000	5,900,935	— 30.5	2.0
Utah	450	285	+ 57.9	0.9	2,450,000	1,563,758	+ 56.7	1.2
West Virginia	650	663	— 2.0	1.3	1,780,000	1,817,230	— 2.1	0.9
Wyoming	825	813	+ 1.5	1.6	3,750,000	3,664,736	+ 2.3	1.8
Other States*	40	56	— 28.6	0.1	150,000	193,274	— 22.4	0.0
Total United States	50,137	53,350	— 6.0	100.0	207,800,000	219,404,228	— 5.3	100.0

* Other States include Georgia, Idaho, Nevada, Maryland, Oregon, Tennessee, Virginia and Washington.
[1] Gulf of Mexico wells are included in South Louisiana figures.

Footage and Average Depths Drilled in All Wells in the United States in 1957

1957 to 10,800,000 feet during 1958.

Completions in Utah are forecast at 450, an increase of 57.9 percent from the 285 wells drilled in 1957.

The forecast also predicts that 137 more wells will be drilled in Kentucky, 60 more in Mississippi, 31 more in Michigan and 12 more in Wyoming than in 1957.

A slump in Texas drilling activity is expected to occur in 1958. A total of only 19,200 new wells are forecast for the state in 1958, compared with 21,290 during 1957 and 22,361 during 1956. However, Texas will still account for 38 percent of all U. S. drilling.

Texas footage is seen as declining to 82 million feet in 1958, in contrast with 90 million during 1957 and 95 million in 1956.

East Texas and the Middle Gulf Coast are the only Texas regions expected to drill more wells in 1958 than in 1957, and increases in these districts are almost too small to be considered as gains.

Drilling forecasts by WORLD OIL are made on an annual and semi-annual basis, and are based largely on a survey of oil company drilling plans. Numerous companies which account for a sizable portion of the drilling activity in both the U. S. report how many wells they expect to drill by areas.

Data received from all companies are combined and compared with operations of the same concerns during the previous year to indicate probable drilling rates in the year ahead.

Wells Completed Annually in United States

Source: WORLD OIL and predecessor, The Oil Weekly, with aid of other authoritative sources, 1921 to now; 1920 and earlier years from U. S Bureau of Mines and "Petroleum in the United States and Possessions," by Arnold and Kemnitzer.

	NEW WELLS, BY CLASSES							TOTAL NEW WELLS				
	IN SEARCH OF PRODUCTION				SERVICE							
YEAR	Oil	Distil-late	Gas	Dry	Water Input	Gas In-jection	Salt Water Disposal	New Wells Drilled	*Footage Drilled	*Avge. Well Depth	Old Wells Drilled Deeper	Total Comple-tions
1859-1917	380,502	....	20,183	91,821	.....	....	....	492,506	.....	....	....	492,506
1918	17,860	....	2,324	5,629	.....	....	....	25,813	.....	....	....	25,813
1919	21,041	....	2,153	6,075	.....	....	....	29,269	.....	....	....	29,269
1920	24,278	....	2,275	7,476	.....	....	....	34,029	.....	....	....	34,029
1921	14,715	....	2,081	5,193	.....	....	....	21,989	.....	....	....	21,989
1922	17,790	....	1,926	5,191	.....	....	....	24,907	.....	....	....	24,907
1923	16,182	....	2,140	6,043	.....	....	....	24,365	.....	....	....	24,365
1924	14,707	....	2,172	5,591	.....	....	....	22,470	.....	....	....	22,470
1925	17,029	....	2,536	6,847	.....	....	....	26,412	76,594,800	2900	....	26,412
1926	18,626	....	2,502	8,328	.....	....	....	29,456	82,476,800	2800	....	29,456
1927	14,382	....	2,494	7,213	.....	....	....	24,089	72,267,000	3000	....	24,089
1928	12,505	....	2,754	7,164	2,342	....	....	24,765	74,295,000	3000	....	24,765
1929	15,758	....	3,107	7,600	3,898	....	....	30,363	88,052,700	2900	....	30,363
1930	12,133	....	2,971	6,163	2,444	....	....	23,711	68,761,900	2900	....	23,711
1931	7,061	....	2,067	3,264	567	....	....	12,959	37,892,116	2924	....	12,959
1932	10,569	....	1,079	3,389	799	....	....	15,836	47,682,196	3011	....	15,836
1933	7,887	....	1,190	3,492	954	....	....	13,523	39,568,298	2926	....	13,523
1934	13,119	....	1,496	4,811	1,696	....	....	21,122	56,141,433	2658	....	21,122
1935	15,418	....	1,802	5,696	1,665	....	....	24,581	67,844,939	2760	....	24,581
1936	18,704	....	2,375	5,787	2,096	....	....	28,962	80,996,816	2797	....	28,962
1937	23,115	....	2,732	6,627	2,739	....	....	35,213	105,099,189	2985	....	35,213
1938	19,106	....	2,143	6,515	1,363	....	....	29,127	90,585,158	3110	....	29,127
1939	17,734	....	2,030	6,890	1,358	....	....	28,012	85,523,094	3053	....	28,012
1940	19,843	....	2,265	7,053	1,988	....	....	31,149	96,182,605	3088	....	31,149
1941	19,590	....	3,279	7,280	2,197	117	47	32,510	99,347,714	3056	822	33,332
1942	10,977	105	2,685	5,962	2,141	73	47	21,990	67,903,053	3088	588	22,578
1943	9,887	76	2,314	6,364	1,576	90	42	20,349	61,991,857	3046	471	20,820
1944	13,502	54	3,024	7,153	1,784	218	51	25,786	84,378,457	3272	377	26,163
1945	13,944	153	3,039	7,346	1,796	329	42	26,649	92,982,113	3489	491	27,140
1946	16,087	207	3,355	8,496	1,816	219	50	30,230	101,124,813	3345	615	30,845
1947	17,613	283	3,437	9,751	1,861	156	46	33,147	112,816,124	3404	651	33,798
1948	22,197	346	2,966	11,939	1,885	84	60	39,477	136,709,153	3463	533	40,010
1949	21,415	378	3,121	12,898	1,036	56	58	38,962	138,616,941	3558	535	39,497
1950	23,775	465	3,015	14,918	993	38	103	43,307	159,761,732	3689	751	44,058
1951	23,532	344	3,198	17,497	1,323	35	67	45,996	176,757,221	3843	770	46,766
1952	23,371	348	3,345	18,211	1,147	25	62	46,509	188,392,695	4051	537	47,046
1953	25,251	374	3,858	18,759	1,123	25	90	49,480	198,431,603	4010	486	49,966
1954	28,063	672	3,547	19,137	682	21	75	52,197	211,296,158	4048	498	52,695
1955	30,474	709	3,460	20,564	551	13	108	55,879	228,529,688	4090	535	56,414
1956	30,641	551	3,944	22,254	852	10	166	58,418	235,386,441	4029	476	58,894
1957†	27,364	748	3,727	20,156	1,244	7	104	53,350	219,404,228	4,113	384	53,734
Total	1,107,747	5,813	126,111	458,543	47,916	1,516	1,218	1,748,864	.....	.....	9520	1,758,384

* Footage data not available prior to 1925 and estimated 1925-1930; actual statistics after 1930.
† Data for 1957 subject to slight revision.

Footage and Average Depths Drilled in All Wells in the United States in 1957

STATE or DISTRICT	TOTAL NEW WELLS (See below) 1957 Wells	1957 Footage	1957 Avge. Depth	1956 Wells	1956 Footage	1956 Avge. Depth	OLD WELLS DRILLED DEEPER, 1957 (Productive and Dry) Wells	Footage	Avge. Depth	TOTAL ALL WELLS 1957 Wells	1957 Footage	1957 Avge. Depth	1956 Wells	1956 Footage	1956 Avge. Depth
Alabama	94	790,240	8407	90	769,685	8552				94	790,240	8407	90	769,685	8552
Arizona	2	4,505	2253	7	22,048	3150				2	4,505	2253	7	22,048	3150
Arkansas	1,104	3,371,923	3054	1,025	3,055,699	2981				1,104	3,371,923	3054	1,026	3,056,465	2979
California	2,253	9,678,046	4296	2,201	10,030,280	4557	113	86,818		2,366	9,764,864	4127	2,342	10,178,491	4346
Colorado	815	4,267,074	5236	1,265	6,511,406	5147	1	1,582	1582	816	4,258,656	5231	1,275	6,526,447	5119
Florida	9	61,732	6859	14	94,819	6773				9	61,732	6859	14	94,819	6773
Georgia	5	25,712	5142	7	30,149	4307				5	25,712	5242	7	30,149	4307
Idaho	1	3,947	3947	5	19,534	3907				1	3,947	3947	5	19,534	3907
Illinois	2,590	5,928,958	2289	3,650	8,403,053	2302				2,590	5,928,958	2289	3,559	8,406,628	2298
Indiana	718	1,211,411	1687	707	1,230,690	1741	2	1,277	639	720	1,212,688	1684	710	1,232,520	1736
Kansas	4,222	14,995,879	3552	4,643	16,448,860	3543	3	1,742	581	4,225	14,997,621	3550	4,643	16,448,860	3543
Kentucky	1,763	2,541,186	1441	2,009	3,010,923	1499				1,763	2,541,186	1441	2,010	3,011,628	1498
Louisiana	3,772	29,746,194	7886	3,803	27,985,517	7359	2	10,787	5394	3,774	29,756,981	7885	3,807	27,990,482	7352
North Louisiana	1,433	5,234,383	3653	1,651	5,990,513	3628				1,433	5,234,383	3652	1,651	5,990,513	3628
South Louisiana	2,339	24,511,811	10180	2,152	21,995,004	10221	2	10,787	5394	2,341	24,522,598	10,475	2,156	21,999,969	10204
Maryland	3	16,500	5500	4	30,716	7679				3	16,500	5500	4	30,716	7679
Michigan	419	1,196,801	2856	438	1,268,400	2896	13	14,291	1099	432	1,211,092	2803	447	1,278,784	2861
Mississippi	390	2,897,555	7430	435	3,145,761	7232				390	2,897,555	7430	435	3,145,761	7232
Missouri	10	7,647	765	25	27,153	1086	1	1,058	1058	11	8,705	791	25	27,153	1086
Montana	429	2,143,462	4996	503	2,490,947	4952	1	1,715	1715	430	2,145,177	4989	503	2,490,947	4952
Nebraska	893	5,297,998	5933	888	5,147,753	5797				893	5,297,998	5933	888	5,147,753	5797
Nevada	5	11,260	2252	6	36,613	6102				5	11,260	2252	6	36,613	6102
New Mexico	2,192	10,354,453	4724	1,967	8,744,835	4446	11	6,523	593	2,203	10,360,976	4703	1,977	8,753,886	4428
New York	519	813,500	1567	492	768,136	1561				519	813,500	1567	492	768,136	1561
North Dakota	312	2,120,326	6796	280	2,078,821	7424	1	3,148	3148	313	2,123,474	6784	281	2,080,072	7402
Ohio	1,011	2,423,755	2397	1,026	2,461,960	2400	9	6,868	763	1,020	2,430,623	2383	1,038	2,472,781	2382
Oklahoma	5,663	19,419,287	3429	7,642	27,135,586	3551	88	75,000	852	5,751	19,494,287	3390	7,746	27,214,378	3513
Oregon	3	19,396	6465	1	12,880	12880				3	19,396	6465	1	12,880	12880
Pennsylvania	1,022	2,649,658	2593	1,047	2,446,017	2336	1	1,772	1772	1,023	2,651,430	2592	1,069	2,467,203	2308
South Dakota	41	140,675	3431	21	71,164	3389				41	140,675	5870	21	71,164	3389
Tennessee	20	31,000	1550	22	34,412	1564				20	31,000	1550	22	34,412	1564
Texas	21,290	90,102,965	4232	22,361	95,021,813	4249	128	136,763	1068	21,418	90,239,728	4213	22,495	95,196,707	4232
Dist. 1: S. Central	1,255	3,253,106	2592	1,994	5,084,305	2550	7	6,610	944	1,262	3,259,716	2583	1,999	5,086,467	2545
Dist. 2: Middle Gulf	760	4,607,353	6062	814	5,007,110	6151	2	3,108	1595	762	4,610,462	6050	816	5,011,762	6142
Dist. 3: Upper Gulf	1,644	10,763,881	6547	1,827	12,541,644	6865	3	4,478	1493	1,647	10,768,359	6538	1,854	12,574,247	6782
Dist. 4: L. Gulf-S.W.	1,426	7,531,685	5282	1,450	7,565,442	5218	6	8,010	1335	1,432	7,539,695	5265	1,460	7,578,524	5191
Dist. 5: East Central	180	775,682	4309	241	868,129	3602				180	775,682	4309	241	868,129	3602
Dist. 6: Northeast	1,069	5,811,496	5436	964	5,173,418	5367	1	462	462	1,070	5,811,958	5432	965	5,177,713	5366
Dist. 7-B: N. Central	2,664	8,847,789	3321	3,024	10,721,046	3545	16	13,619	851	2,680	8,861,408	3306	3,040	10,743,626	3534
Dist. 7-C: W. Central	1,155	5,396,822	4673	1,228	5,600,837	4561	9	7,642	849	1,164	5,404,464	4643	1,238	5,622,089	4541
Dist. 8: West	5,047	24,723,460	4899	4,364	22,470,236	5149	49	52,070	1063	5,096	24,775,530	4862	4,404	22,520,098	5114
Dist. 9: North	4,640	12,490,756	2692	5,058	14,453,187	2857	34	38,592	1135	4,674	12,529,348	2681	5,080	14,474,942	2849
Dist. 10: Panhandle	1,450	5,900,935	4070	1,397	5,536,459	3936	1	2,171	2171	1,451	5,903,106	4068	1,398	5,539,110	3962
Utah	285	1,563,758	5487	146	694,502	4757	3	2,963	988	288	1,566,721	5440	148	699,534	4727
Virginia	15	65,000	4333	21	95,100	4529				15	65,000	4333	21	95,100	4529
Washington	4	20,459	5115	5	32,338	6468				4	20,459	5115	5	32,338	6469
West Virginia	663	1,817,230	2741	698	1,902,460	2726				663	1,817,230	2741	699	1,902,613	2722
Wyoming	813	3,664,736	4508	964	4,126,411	4281	7	10,315	1474	820	3,675,651	4482	976	4,144,726	4247
Total United States	53,350	219,404,228	4113	58,418	235,386,441	4030	384	362,622	944	53,734	219,766,850	4090	58,894	235,890,813	4005

STATE or DISTRICT	OIL Wells	OIL Footage	OIL Avge. Depth	DISTILLATE Wells	DISTILLATE Footage	DISTILLATE Avge. Depth	GAS Wells	GAS Footage	GAS Avge. Depth	DRY Wells	DRY Footage	DRY Avge. Depth	SERVICE WELLS Wells	SERVICE WELLS Footage	SERVICE WELLS Avge. Depth
Alabama	53	607,437	11461				1	1,641	1641	40	181,162	4529			
Arizona										2	4,505	2253			
Arkansas	704	1,924,318	2733				22	101,294	4604	377	1,344,561	3566	1	1,750	1750
California	1,586	6,491,160	4093				62	350,026	5646	602	2,920,993	4686	3	15,867	5289
Colorado	146	796,278	5454	2	12,113	6057	90	493,910	5488	577	2,964,773	5138			
Florida										9	61,732	6859			
Georgia										5	25,712	5142			
Idaho										1	3,947	3947			
Illinois	1,047	2,452,462	2342				24	17,551	731	1,516	3,454,435	2279	3	4,510	1503
Indiana	241	442,149	1835				20	18,945	947	454	747,653	1647	3	2,664	888
Kansas	1,897	6,399,517	3373				339	1,326,240	3912	1,884	7,044,196	3739	102	225,926	2215
Kentucky	608	699,635	1151				167	379,223	2271	966	1,436,594	1487	22	25,734	1170
Louisiana	1,833	12,900,870	7038	238	2,853,144	11988	264	2,235,815	8469	1,347	11,756,365	8181			
North Louisiana	777	2,273,623	2926	15	132,521	8835	105	423,454	4033	536	2,404,875	4487			
South Louisiana	1,056	10,627,247	10064	223	2,720,623	12200	159	1,812,361	11398	901	9,351,580	10379			
Maryland							1	5,500	5500	2	11,000	5500			
Michigan	175	555,896	3177				24	62,051	2585	220	578,854	2631			
Mississippi	112	927,049	8277	18	161,006	8945	8	74,490	9311	252	1,735,010	6885			
Missouri	1	1,418	1418							9	6,229	692			
Montana	193	1,048,053	5430				12	29,642	2470	224	1,065,767	4758			
Nebraska	290	1,793,008	6183				3	11,857	3952	600	3,493,133	5822			
Nevada										5	1,260	2252			
New Mexico	1,166	5,847,093	5015	10	96,771	9677	555	2,388,007	41600	459	2,005,944	4370	2	16,638	8319
New York	244	330,570	1355				24	78,600	3275	30	86,400	2880	221	317,930	1439
North Dakota	165	1,344,721	8150							147	775,605	5276			
Ohio	577	1,442,857	2501				202	526,641	2607	232	454,257	1958			
Oklahoma	3,104	10,621,106	3422	39	282,922	7254	261	1,395,294	5346	1,851	6,481,565	3502	408	638,400	1565
Oregon										3	19,396	6465			
Pennsylvania	350	554,037	1583				262	1,193,168	4554	65	352,913	5429	345	549,540	1593
South Dakota	1	8,824	8824							40	131,851	3296			
Tennessee										20	31,000	1550			
Texas	12,285	50,266,251	4092	434	3,636,871	8380	885	4,490,835	5074	447	31,164,623	4185	239	544,385	2278
Dist. 1: South Central	682	1,426,452	2092	21	176,755	8417	35	157,218	4492	515	1,487,211	2887	2	5,470	2735
Dist. 2: Middle Gulf	201	1,175,454	5848	87	714,883	8217	124	627,602	5061	348	2,089,414	6004			
Dist. 3: Upper Gulf	721	4,088,689	5671	115	1,085,663	9441	83	570,683	6876	724	5,011,427	6922	1	7,419	7419
Dist. 4: Lower Gulf-S.W.	476	2,217,107	4658	129	1,041,863	8076	123	620,844	5048	698	3,651,871	5232			
Dist. 5: East Central	20	97,079	4854	5	38,089	7618	5	29,394	5879	150	611,120	4074			
Dist. 6: Northeast	602	3,106,952	5161	29	196,381	6772	67	442,919	6611	371	2,065,244	5567			
Dist. 7-B: North Central	1,277	4,374,633	3426	1	5,054	5054	40	145,484	3637	1,341	4,304,956	3210	5	17,662	3532
Dist. 7-C: West Central	729	3,585,388	4918	2	20,784	10392	26	149,624	5755	396	1,638,052	4136	2	2,974	1487
Dist. 8: West	4,136	19,910,741	4814	4	34,421	8605	60	388,491	6475	767	4,162,087	5426	80	227,720	2847
Dist. 9: North	2,486	6,757,788	2718	16	97,952	6122	63	356,143	5653	1,926	4,995,733	2594	149	283,140	1900
Dist. 10: Panhandle	955	3,525,968	3692	25	225,026	9001	259	1,002,433	3870	211	1,147,508	5438			
Utah	149	864,758	5804				12	47,120	3927	124	651,880	5257			
Virginia							10	45,000	4500	5	20,000	4000			
Washington	1	4,130	4130							3	16,329	5443			
West Virginia	98	194,074	1980	5	18,982	3796	436	1,234,993	2833	124	369,181	2977			
Wyoming	338	1,525,338	4513	2	15,629	7815	43	250,436	5824	424	1,858,129	4382	6	15,204	2534
Total United States	27,364	110,043,009	4021	748	7,077,438	9462	3,727	16,758,279	4496	20,156	83,166,954	4126	1,355	2,358,548	1741

29,750 productive completions in '58 forecast

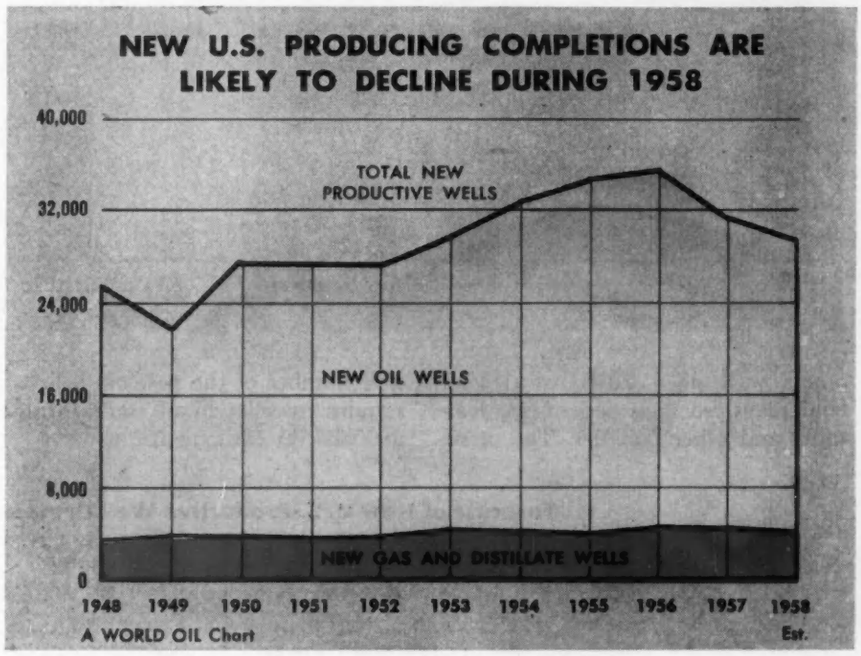
THE 6 PERCENT drop in drilling activity forecast for the U. S. for 1958 (see Page 137) is expected to be paralleled by a similar decline in the number of new producing wells.

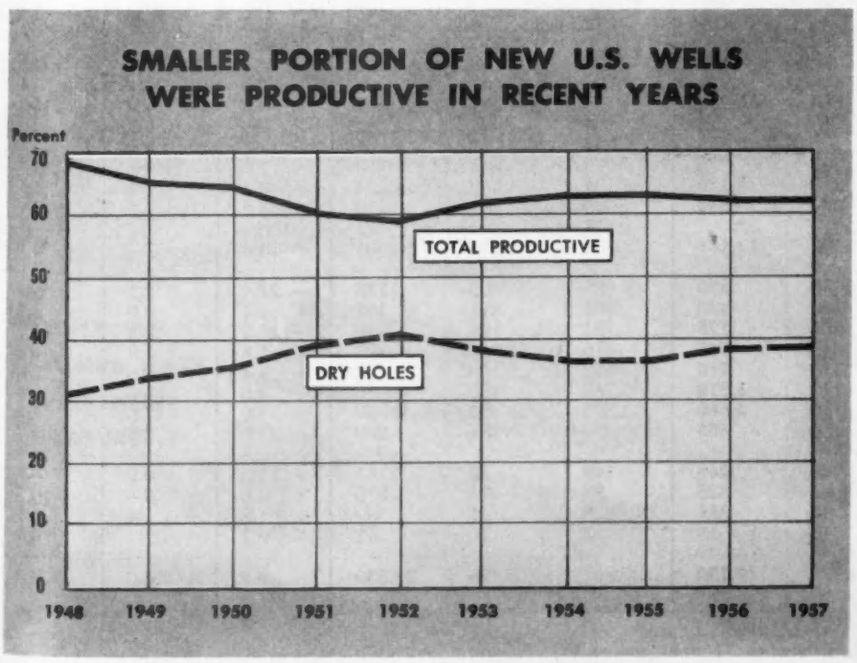
Indicated drilling rates presage the completion in 1958 of approximately 29,750 new productive wells, consisting of about 25,530 oil wells and 4220 gas and distillate wells. In 1957, there were 31,839 productive wells completed, of which 27,364 were oil wells and 4475 were gas and distillate producing wells.

The anticipated decline follows a sharp decrease in U. S. drilling activity during the past year, the first year since World War II in which the drilling industry failed to register a substantial increase. Chief among the factors responsible for the expected decline are the ability to produce significantly more oil than is required to meet demand and the general feeling that the domestic oil industry will record relatively little growth during the current year.

For the seventh consecutive year, the percent of the wells drilled which found oil, gas or distillate hovered at the 62 percent level. And again, last year, most of the decrease in percent of wells drilled which find production occurred in oil wells.

During the 1937-1941 period, 68 percent of the wells drilled produced oil. This level has declined over the years until only 52.6 percent of the wells drilled in 1957 produced oil. The declining trend has been noticed particularly during the past two years:





In 1956 this category percent was 53.4 percent, down 1.8 percent from 1955; in 1957 it experienced a further decline amounting to 0.8 percent as compared to 1956.

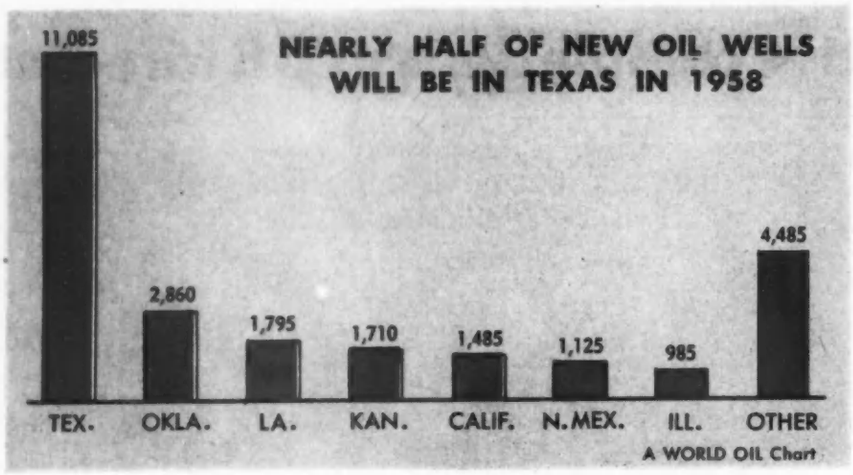
The percentage of wells drilled that produced gas or distillate increased last year for the second consecutive year. In 1957, 8.6 percent of the wells drilled produced gas or distillate, up 0.8 percent from 1956, which had reflected a 0.2 percent rise from 1955.

Each of these new producing wells will need to be equipped with wellheads, production lines etc. And many

Percent of U. S. Wells Drilled in Search of Production Which Were Productive

	Oil Wells	Gas and Distillate Wells	Dry Holes
1937-1941..	68.0	8.5	23.5
1942-1946..	56.1	13.1	30.8
1947.....	56.7	11.9	31.4
1948.....	59.3	8.8	31.9
1949.....	56.6	9.3	34.1
1950.....	56.4	8.2	35.4
1951.....	52.8	7.9	39.3
1952.....	51.6	8.2	40.2
1953.....	52.3	8.8	38.9
1954.....	54.6	8.2	37.2
1955.....	55.2	7.6	37.2
1956.....	53.4	7.8	38.8
1957.....	52.6	8.6	38.8

1. All-Steel Fr...



others will need additional lease equipment, such as separators, lease tanks and other facilities. Too, a sizable number of the new oil wells will require installation of some form of artificial lift equipment.

Because of its greater drilling activity, Texas again will lead in new producing completions. Anticipated Texas drilling is expected to result in the completion of about 12,185 new producing wells, of which 11,085 are likely to be oil producers and 1100 producers of gas or distillate.

The second largest number of new producing completions in 1958 should be in Oklahoma, where 3130 wells are forecast. Both Louisiana and Kansas should record more than 2000 new producing completions this year.

Following, in order, will come New Mexico, California and Illinois. Each of these states, it is anticipated, will exceed 1000 new producing-well completions during 1958.

Forecast of New U. S. Productive Well Completions in 1958

STATE or DISTRICT	1958 FORECAST			1957 ACTUAL			% DIFF.	1958 Percent OF U.S.	
	New Oil Wells	New Gas and Distillate Wells	Total Productive Wells	New Oil Wells	New Gas and Distillate Wells	Total Productive Wells	Total Productive Wells	New Oil Wells	New Gas and Distillate Wells
Alabama	30	2	**32**	53	1	54	— 40.8	0.1	.....
Arizona	.....	.....	.....	2	.....	2	—100.0	.....	.....
Arkansas	640	15	**655**	704	22	726	— 9.8	2.5	0.4
California	1,485	55	**1,540**	1,586	62	1,648	— 6.6	5.8	1.3
Colorado	150	80	**230**	146	92	238	— 3.4	0.6	1.9
Illinois	985	18	**1,003**	1,047	24	1,071	— 6.4	3.8	0.4
Indiana	240	15	**255**	241	20	261	— 2.3	1.0	0.3
Kansas	1,710	310	**2,020**	1,897	339	2,236	— 9.7	6.7	7.4
Kentucky	665	190	**855**	608	167	775	+ 10.3	2.6	4.5
Louisiana	1,795	505	**2,300**	1,833	502	2,335	— 1.5	7.0	11.9
North Louisiana	760	125	**885**	777	120	897	— 1.3	3.0	2.9
South Louisiana	1,035	380	**1,415**	1,056	382	1,438	— 1.6	4.0	9.0
Gulf of Mexico[1]	330	80	**410**	362	90	452	— 9.3	1.3	1.9
Michigan	180	20	**200**	175	24	199	+ 0.5	0.7	0.5
Mississippi	130	30	**160**	112	26	138	+ 15.9	0.5	0.7
Missouri	.....	.....	.....	1	.....	1	—100.0	.....	.....
Montana	180	10	**190**	193	12	205	— 7.3	0.7	0.3
Nebraska	285	5	**290**	290	3	293	— 1.0	1.1	0.1
New Mexico	1,125	610	**1,735**	1,166	565	1,731	+ 0.2	4.5	14.4
New York	235	15	**250**	244	24	268	— 6.7	0.9	0.4
North Dakota	185	.....	**185**	165	.....	165	+ 12.1	0.7	.....
Ohio	570	200	**770**	577	202	779	— 1.2	2.2	4.7
Oklahoma	2,860	270	**3,130**	3,104	300	3,404	— 8.1	11.2	6.4
Pennsylvania	320	260	**580**	350	262	612	— 5.2	1.3	6.2
South Dakota	.....	.....	.....	1	.....	1	—100.0	.....	.....
Texas	11,085	1,100	**12,185**	12,285	1,319	13,604	— 10.4	43.4	26.1
Dist. 1: South Central	550	30	**580**	682	56	738	— 21.4	2.1	0.7
Dist. 2: Middle Gulf	230	200	**430**	201	211	412	+ 4.4	0.9	4.7
Dist. 3: Upper Gulf	620	155	**775**	721	198	919	— 15.7	2.5	3.7
Dist. 4: Lower Gulf-S.W.	475	240	**715**	476	252	728	— 1.8	1.8	5.7
Dist. 5 & 6: East	650	110	**760**	622	106	728	+ 4.4	2.6	2.6
Dist. 7-B & 9: North	3,400	110	**3,510**	3,763	120	3,883	— 9.6	13.3	2.6
Dist. 7-C & 8: West	4,500	60	**4,560**	4,865	92	4,957	— 8.0	17.6	1.4
Dist. 10: Panhandle	660	195	**855**	955	284	1,239	— 31.0	2.6	4.7
Utah	240	20	**260**	149	12	161	+ 61.5	0.9	0.4
West Virginia	90	435	**525**	98	441	539	— 2.6	0.4	10.3
Wyoming	345	45	**390**	338	45	383	+ 1.8	1.4	1.1
Other States*	.....	10	**10**	1	10	11	— 9.1	.....	0.3
Total U.S.	25,530	4,220	**29,750**	27,364	4,475	31,839	— 6.6	100.0	100.0

[1] Gulf of Mexico wells are included in South Louisiana figures.
* Other states included Florida, Maryland, Nevada, Tennessee and Washington.

A truly modern pump should have:

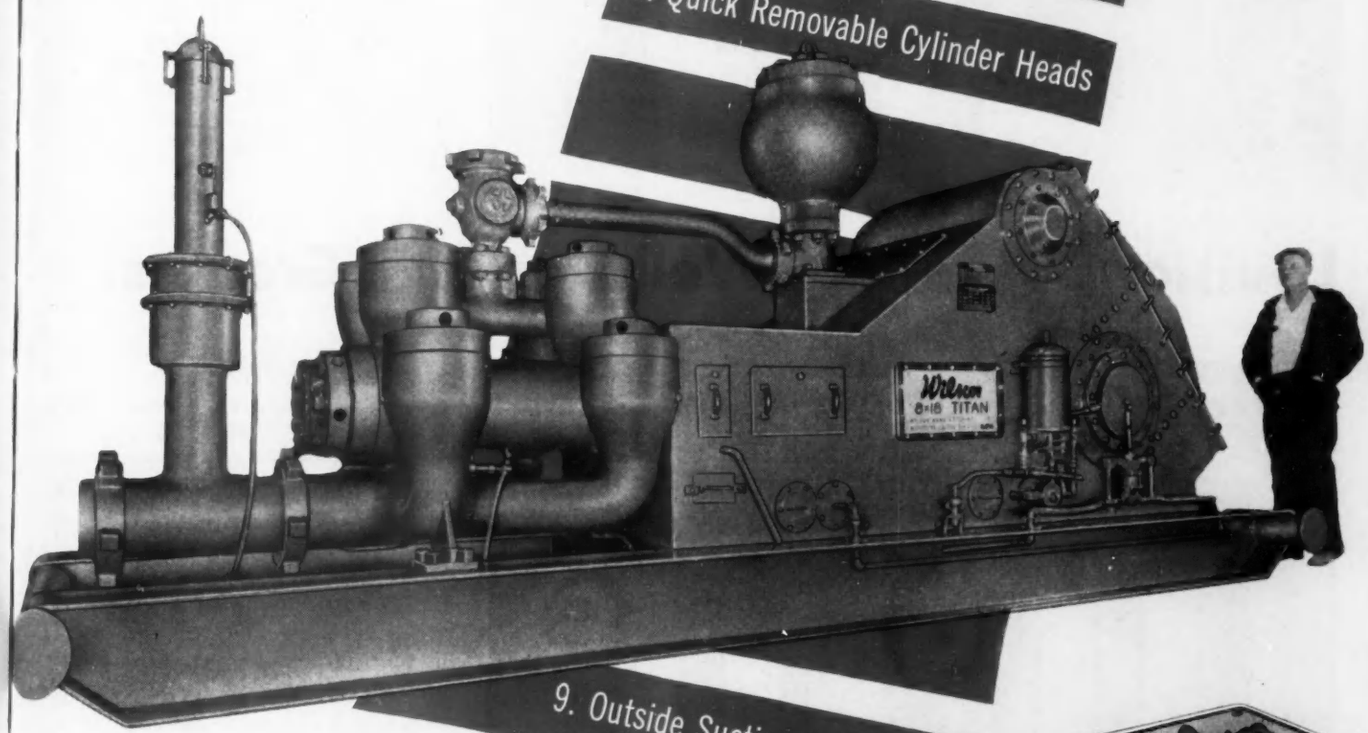
1. All-Steel Frame
2. Chain Drive - No Gears
3. Alloy Steel Fluid End
4. Suction Flow Equalizer
5. Low Cost Per Horsepower
6. Low Weight Per Horsepower
7. Quick Removable Valve Covers
8. Quick Removable Cylinder Heads
9. Outside Suction Valve Pots
10. Tapered Threads on Rods and Pony Rods
11. Full Pressure Lubrication with Warning Alarm
12. Self-aligning Roller Bearings on all Full Rotating Shafts

WILSON PUMPS HAVE THESE FEATURES AND MANY MORE

WILSON HAS A PUMP TO FIT ANY NEED

BETWEEN 300 AND 1250 HORSEPOWER

It's sensational! A 1250 H.P. pump that weighs ONLY 35,300 pounds complete with pistons, rods, liners, valves, skids, and Suction Flow Equalizer.



ONLY WILSON PUMPS HAVE ALL THESE FEATURES

Wilson

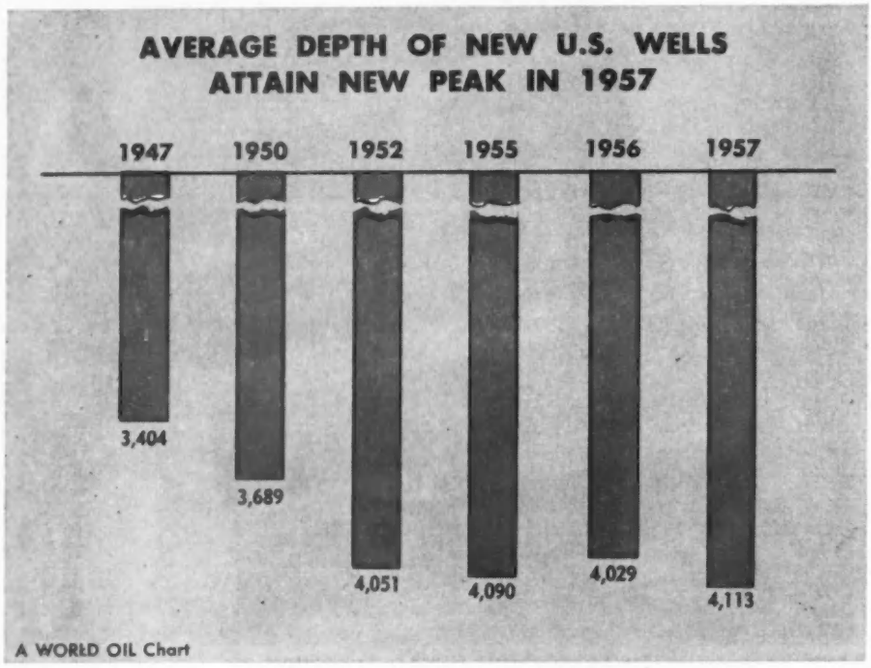
WILSON
MANUFACTURING CO., INC.
WICHITA FALLS, TEXAS, U.S.A.

The Home of Red Iron

BE MODERN— BUY WILSON

Average depth per well sets a record

THE U. S. DRILLING industry, faced with a general down trend in activity during 1957, did establish one all-time peak. The new record was set in the average depth per well category when U. S. well depth averaged 84 feet per well more than during 1956 and 23 feet per well greater than the previous record established in 1955. Drilling of 219,404,228 feet of hole in completing 53,350 wells resulted in an average depth of 4113 feet per new completion last year.



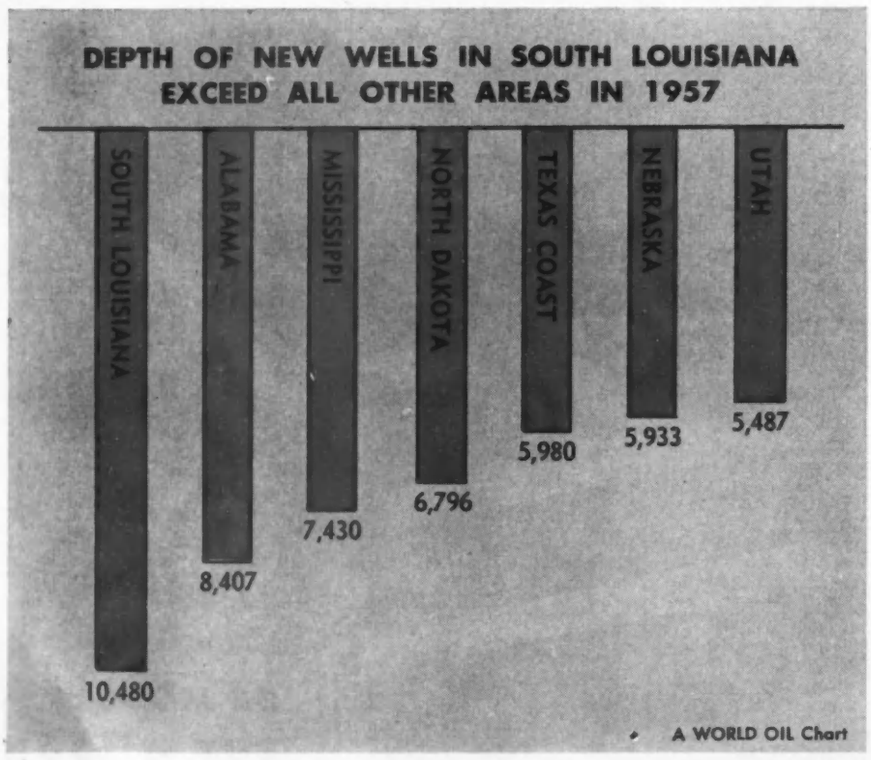
The year 1957, then, was the sixth in history in which average depths of new completions exceeded 4000 feet.

Factors contributing to the new depth-per-well record included:

- Greater concentration of drilling activity in areas involving deeper objective horizons.
- An increase in drilling in certain regions with above-national-average depths.
- A decrease in some shallower depth areas' drilling programs.

Five years ago, the average depth of new U. S. completions was only 4010 feet per well, and ten years ago the national average was but 3463 feet per new well completion.

Louisiana Average Well Depth Is Greatest



AGAIN, IN 1957, wells drilled in South Louisiana continued to record significantly greater average depth than wells completed in other regions. South Louisiana completions in 1957 had an average depth of 10,480 feet, as compared with the national average of only 4113 feet. This was a greater average depth per new well completion than in 1956, when the Louisiana area's depth averaged 10,221 feet, or in 1955, when the region accounted for an average depth figure of 10,079 feet.

Ranking second to South Louisiana last year was Alabama, which recorded an average depth of 8407 feet for its 94 completions. This was tantamount to a decrease of 145 feet from 1956, when the state's average depth amounted to 8552 feet.

On the basis of an average depth of 7430 feet for all wells completed during 1957, Mississippi surged into the No. 3 position. In the previous year, Mississippi's average depth was 7232 feet.

Ten areas get new drilling depth records during 1957

THE U. S. DRILLING depth record remained unchanged during 1957. However, two new areas were tested below the 20,000-foot mark, and ten areas in all recorded new deep drilling records during the year.

U. S. regions which have been tested to below 20,000 feet expanded to six during 1957. Pan American's University "CS" 1, Pecos County, West Texas, was drilled to 21,687 feet. It is now the second deepest test ever drilled in the world. Magnolia Petroleum's Sterba-Ordovician 1, Caddo County, Oklahoma, was drilled to 20,426 feet during the year. The well bettered the state's previous depth record by 2268 feet, while the Pan American test exceeded Texas' previous depth record by 2635 feet.

The deepest well ever drilled is still Richardson & Bass et al's Humble LL & E 1-L, in Plaquemines Parish, South Louisiana. It was drilled to a depth record of 22,570 feet during 1956.

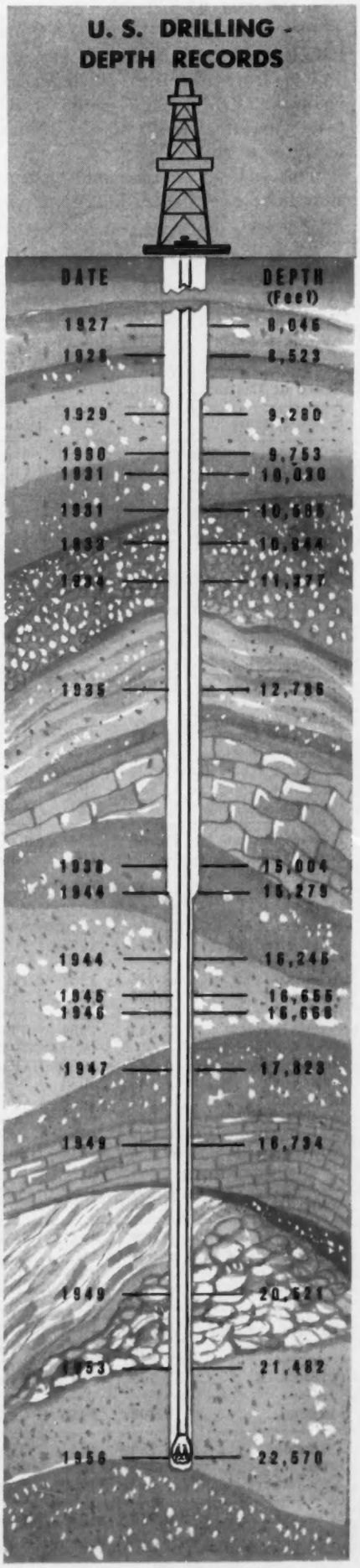
The three other U. S. regions which have been explored by the drilling bit to the four-mile level are: California, where Ohio Oil's KCL "A" 72-4, drilled to 21,482 feet in 1955; Wyoming, where Superior Oil Company's Unit 1, drilled to 20,521 feet in 1949; and Mississippi, where George Vassen et al's Tun 1, drilled to 20,450 feet in 1952.

The U. S. drilling depth record has advanced rapidly. The first well to reach 10,000 feet was in 1931. The first 11,000-foot well was drilled in 1934. The following year saw the 12,000-foot mark reached. The first well to attain a depth of 15,000 feet was drilled in 1938, and the first 16,000-foot test was in 1944.

The year 1947 saw the first 17,000-foot well. The year 1949 saw both the first 18,000-foot well and the first 20,000-foot well. The 21,000-foot mark was reached in 1953, and the 22,000-foot level in 1956.

In all, eight U. S. new state or district drilling depth records were established during 1957. In addition to those already mentioned the following records were established last year:

Offshore Louisiana, 18,002 feet;



Holders of Record as Deepest Test Drilled

(Includes Both Dry and Producing Wells)

Year	Company, Well and Location	Feet
1927	Chansler-Canfield-Midway Oil Co.'s Olinda 96, Olinda, California	8,046
1928	Texon Oil and Land Co.'s University 1-B, Big Lake, West Texas	8,523
1929	Shell Oil Co.'s Nesa 1, Long Beach, California	9,280
1930	Standard Oil Company of California's Mascot 1, Midway, California	9,753
1931	Chansler-Canfield-Midway Oil Co.'s Hobson A-2, Rincon field, Ventura County, Calif.	10,030
1931	Penn-Mex Fuel Co.'s Jardin 35, State of Vera Cruz, Mexico	10,585
1933	North Kettleman O. & G. Co.'s (later Union Oil's Lillis-Welch 1) Kettleman Hills, Calif.	10,944
1934	General Petroleum Corp.'s Berry 1, Belridge, Kern County, California	11,377
1935	Gulf Oil Corp.'s McElroy 103, Gulf-McElroy, Upton County, W. Texas	12,786
1938	Continental Oil Co.'s KCL A-2, Wasco, Kern County, California	15,004
1944	Phillips Petroleum Co.'s Price 1, Wildcat, Pecos County, West Texas	15,279
1944	Standard Oil Co. of California's KCL 20-13, South Coles Levee, Kern County, California	16,246
1945	Phillips Petroleum Co.'s Schoeps 3, Wildcat, Brazos County, Gulf Coast, Texas	16,655
1946	Pacific Western Oil Corp.'s National Royalties 1, Miramonte area, Kern County, Calif.	16,668
1947	Superior Oil Company of California's Weller 51-11, Wildcat, Caddo County, Okla.	17,823
1949	Superior Oil Company of California's Limoneria 1, Wildcat, Ventura County, Calif.	18,734
1949	Superior Oil Company of California's Unit 1, Wildcat, Sublette County, Wyoming	20,521
1953	Ohio Oil Co.'s Kern County Lands "A" 72-4, Paloma field, Kern Co., California	21,482
1956	Richardson & Bass, Freeport Sulphur & J. W. Mecom's Humble-L.L.&E. 1-L, Plaquemines, S. Louisiana	22,570

New Mexico, 17,555 feet; Colorado, 17,033 feet; North Texas and Panhandle, 15,997 feet; North Dakota, 14,828 feet; Arkansas, 12,925 feet; Nebraska, 8,875 feet; Georgia, 7,613 feet. The latter test was still drilling at the year end.

Thirty U. S. states and districts now have depth records in excess of 10,000 feet. They are scattered from the West Coast to the East Coast, and from the Great Lakes region to the Gulf of Mexico.

Of the 30 regions with drilling depth records in excess of 10,000 feet, four have 11,000-foot records, four have 12,000-foot records, four have 13,000-foot records, while two have 14,000-foot records.

There are three regions with 15,000-foot depth records, one with a depth record of 16,000 feet, three with 17,000 feet, one with an 18,000-foot record, and also but one with a 19,000-foot record.

Then there are three with depth records of 20,000 feet, two with 21,000 feet, and one with 22,000 feet.

Drilling Depth Records in U. S.

State or District	Total Depth	Year	WELL AND LOCATION	Formation
S. La.-Inshore	**22,570**	1956	Richardson & Bass et al's Humble LL&E 1-L, Plaquemines Parish	Miocene
West Texas	**21,687**	1957	Pan American's University "CS" 1, Pecos County	Mississippian
California	**21,482**	1955	Ohio Oil's KCL "A" 72-4, Paloma Field, Kern County	L. Miocene
Wyoming	**20,521**	1949	Superior of Calif.'s Unit 1, Pacific Creek Area, Sublette County	U. Cretaceous
Mississippi	**20,450**	1952	Geo. Vasen et al's Tung Oil Co. of America 1, 9-2s-8-11w, Stone County	Eagle Mills
Oklahoma	**20,426**	1957	Magnolia's Sterba-Ordovician 1, 35-6n-10w, Caddo County	Mississippian
Texas Gulf Coast	**19,056**	1955	Magnolia's West Ranch 417-A, West Ranch Field, Jackson County	Cockfield
S. La.-Offshore	**18,002**	1957	Hunt Oil's State 758-2, Coon Point Field (Ship Shoal area)	Miocene
Southwest Texas	**17,966**	1951	Superior's Minnie S. Welder 27, Portilla Field, San Patricio County	Jackson
N. Mex. S.E.	**17,555**	Active	Shell's James Ranch Unit 1, Eddy County	Ellenburger
Colorado	**17,033**	1957	Phillips Petroleum's No. 1 Mannel 26-1n-95w, Rio Blanco County	Weber
N. Mex.-S.E.	**16,842**	1956	Phillips Petroleum Co.'s Leamex 6,23-17s-33e, Lea County	Pre-Cambrian
East Texas	**16,347**	1949	Humble Oil & Refining's R.P. McWatters 1, Freestone County	Jurassic
N. Tex. & P'handle	**15,997**	1957	Magnolia's D.D. Feldman 1, Hemphill County	Ordovician
Alabama	**15,729**	1952	Humble Oil & Refining's Emma Williams 1, 10-3n-2e, Clarke County	Jurassic
Florida	**15,455**	1947	Gulf Refining's State of Florida 1, Big Pine Key Area, Monroe County	L. Cretaceous
North Louisiana	**14,967**	1947	Cotton Valley Opr. Comm. et al's A.G. Oliphant-Banks 2, Webster County	Salt
North Dakota	**14,828**	1957	Amerada's N. Dakota Unit "A" 9 Beaver Lodge-Tioga Fld., Williams Co.	Pre-Cambrian
Montana	**13,830**	1956	Phillips's Northern Pacific RR 1-A, 33-9s-22e, Carbon County	Madison
Utah	**13,766**	1949	Pacific Western Oil & Equity Oil's Unit 1, 33-21s-21e, Grand County	Pennsylvanian
N. Mex. N.W.	**13,590**	1956	Magnolia's Jicarilla 1-A, 18-23n-2w, Rio Arriba County	Granite
West Virginia	**13,331**	1955	Hope Natural Gas Co.'s Power Oil Co. 9634 Walker Dist., Wood County	Pre-Cambrian
Arkansas	**12,925**	1957	Hunt Oil's R.B. McDonald 1-20s-21w, Columbia County	Salt
Oregon	**12,880**	1956	Sinclair's Federal-Mapleton 1, 12-16s-10w, Lane County	.....
Idaho	**12,844**	1951	Phillips & Utah Southern's Unit 1, 10-14s-30e, Oneida County	.....
Pennsylvania	**12,343**	1951	The California Co.'s Bennett 1, Davidson Twp. Sullivan County	Ordovician
Nevada	**11,543**	1952	Continental Oil & Standard Oil's Summit Springs 1, White Pine County	Mississippian
New York	**11,145**	1953	New York State Natural Gas' Kesselring 1, Van Etten Twp., Chemung County	Theresa
Michigan	**11,012**	1948	Ohio Oil-Pure Oil's Reinhardt 1, West Branch Field, Ogemaw County	Cambro-Ord.
Washington	**11,002**	1947	Standard of Calif.'s Alderwood Comm. 1, Snohomish County	Eocene
North Carolina	**10,054**	1946	Standard Oil Co. of New Jersey's Cape Hatteras 1, Dare County	Granite
Virginia	**9,936**	1949	The California Co.'s Kipps Anthracite Coal Co. 1, Montgomery County	Ordovician
South Dakota	**9,348**	1951	Shell Oil Co.'s J.T. Homme 1, 13-20n-12e, Perkins County	Eocene
Nebraska	**8,875**	1957	Shell's Schneider 2, 26-15n-56w, Heidemann Fld., Kimball County	Pre-Cambrian
Kentucky	**8,821**	1956	Shell's Mildred Davis 1, 17-L-26, Crittenden County	Knox
Kansas	**8,243**	1947	Pan American (Stanolind). Feathers 1, 15-35s-33w, Seward County	Arbuckle
Maryland	**8,165**	1941	William Snee's Schartzer 1, Accident Dist., Carrett County	Helderburg
Ohio	**7,889**	1933	Benedum & Tree's Knowlton 1, Independence Twp., Washington County	Clinton
Illinois	**7,682**	1952	Superior Oil Co.'s H.C. Ford et al C-17, 27-4s-14w, White County	Shakopee
Georgia	**7,613**	Active	J.R. Sealy's Lena Rebecca Sealy 3, Seminole County	L. Cretaceous
Arizona	**7,568**	.....	Arizona Oil & Gas Co.'s State 1, Cochise County	Pennsylvanian
Indiana	**6,408**	1946	Continental's Cooper 1-D, Griffin Field, Gibson County	Trenton
Tennessee	**5,750**	1947	The California Co.'s E.W. Beeler 1, 4-15s-29e, Giles County	Granite
Iowa	**5,305**	1930	Oil Development Co.'s Wilson 1, Page County	Cambrian
New Jersey	**5,022**	1928	W&K Oil Co.'s Well 1, Jackson Mills Area, Ocean County	Granite
Missouri	**4,740**	1941	Strake Petroleum Co.'s T.P. Russell 1, Pemiscot County	Cambrian

Shale from Bay St. Elaine, Louisiana, exposed to both water and T-8 filtrate. After four days the shale in water had completely disintegrated. In T-8 filtrate the shale showed little tendency to hydrate or disintegrate.

T-8 CONTROLS SHALE PROBLEMS...

lowers overall mud costs

As the illustration shows, Magcobar's T-8 Compound effectively retards shale hydration and dispersion. As a result, a high degree of hole stability is maintained through the action of T-8 mud filtrate on the bore hole. Hole enlargement is reduced. A one-package additive, T-8 can be used wherever lime mud is now being used, but T-8 is more efficient and easier to use.

T-8 lowers overall mud costs. The inhibited chemical environment retards build up of drill solids which reduces water requirements and mud system jetting. Less weight material is required, and smaller amounts of chemicals are needed to maintain a good mud.

T-8 builds a mud system that is in a state of "controlled dispersion" when operated within the proper chemical limits. Control of the mud and the handling of materials are simpler than with conventional mud systems. And because T-8 mud has a higher resistivity than high pH lime mud, you'll get better log interpretation and correlation. Also, production has been increased by T-8 mud because hydration of "dirty" sands is retarded and the penetration of mud solids into the sands is reduced.

For greater hole stability where shale is a problem, T-8 is the solution. Write to Magcobar for a technical bulletin, or ask your Magcobar engineer about T-8 mud.

MAGNET COVE BARIUM CORPORATION

Houston, Texas

Magcobar
Complete
DRILLING MUD SERVICE

58-300

HELPING TO SATISFY THE WORLD'S INCREASED THIRST FOR PETROLEUM

One is ever amazed at the great variety of products in which petroleum or petroleum by-products are used. From cosmetics to high octane gasoline, the increasing demand from all four corners of the earth keeps building up to the point where you wonder how long the supply will last.

To help satisfy this tremendous thirst for petroleum, Globe Oil Tools Company performs an important role in making available to the industry one of the finest lines of rock bits on the market.

MORE THAN 25 YEARS SERVICE TO THE OIL INDUSTRY

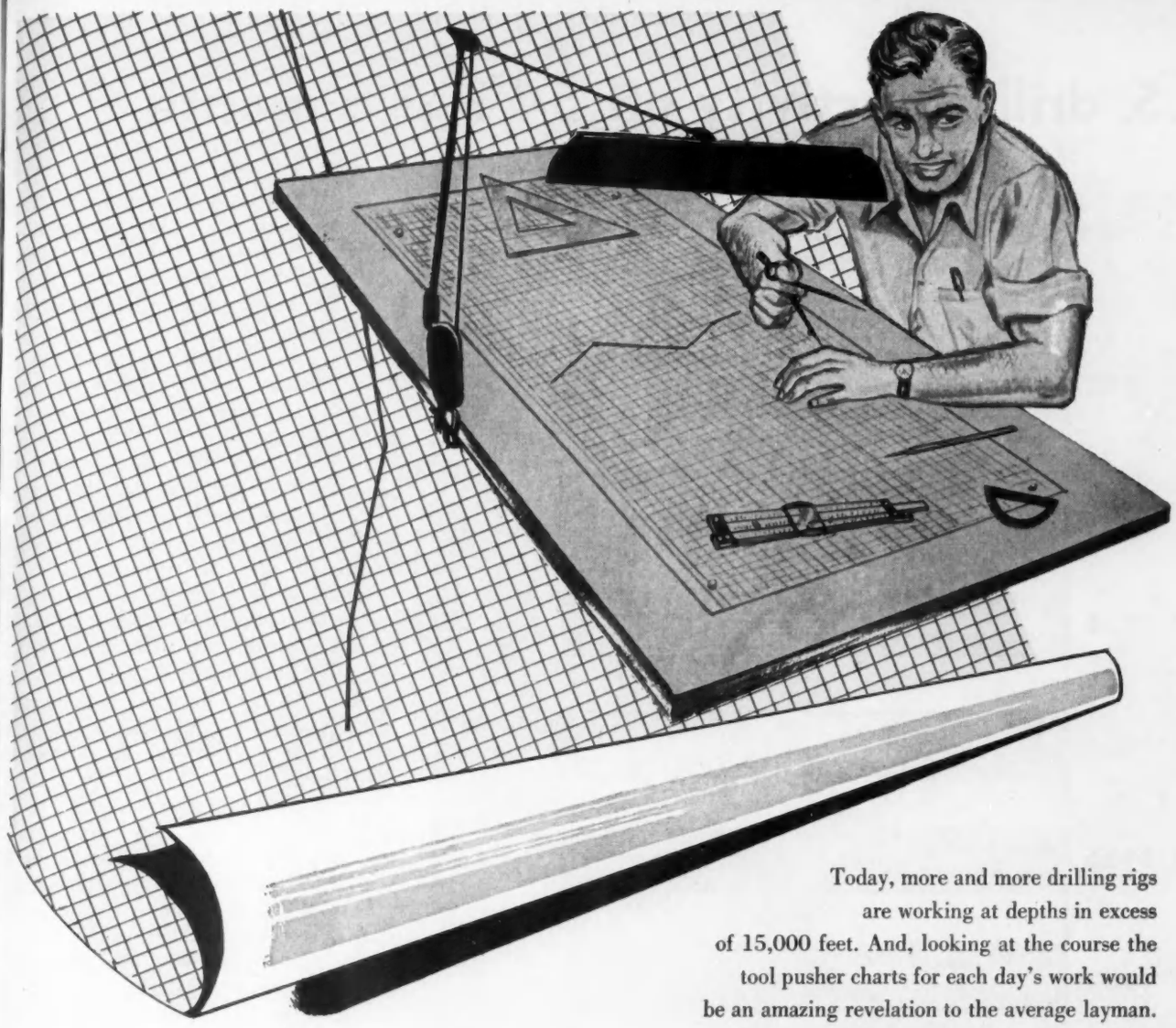
GLOBE "SS2C" ROCK BIT

GLOBE OIL TOOLS CO.

Main Office and Plant: LOS NIETOS, CALIFORNIA

GLOBE OIL TOOLS

Branches In All Principal Drilling Areas Offer Prompt Service To Meet Your Drilling Needs



Charting His Course

3 MILES DOWN!

Today, more and more drilling rigs are working at depths in excess of 15,000 feet. And, looking at the course the tool pusher charts for each day's work would be an amazing revelation to the average layman. To him, drilling an oil well "off vertical" is absolutely incredible . . . the fact that a string of drill pipe will rotate at high speeds while in an angular position seems impossible. To the tool pusher, however, in charting the drilling operation, all it takes is the "know how" and the *right equipment.* Rock Bits, for instance, built of tough, high strength material that will endure the torque and weight of today's deeper oil well drilling **. . . rock bits like the GLOBE!**

GLOBE "S3C" ROCK BIT

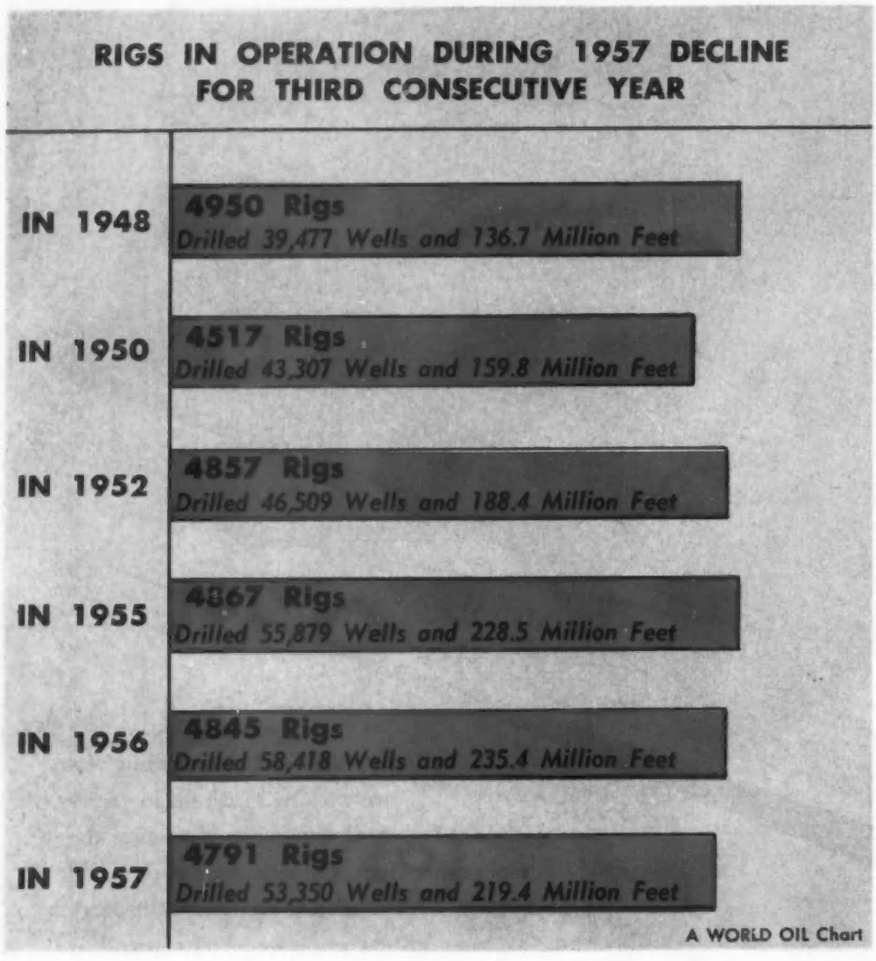
MORE THAN 25 YEARS SERVICE TO THE OIL INDUSTRY

GLOBE OIL TOOLS CO.

Main Office and Plant: LOS NIETOS, CALIFORNIA

Branches In All Principal Drilling Areas Offer Prompt Service To Meet Your Drilling Needs

U.S. drilling activity off 54 rigs a month



U. S. DRILLING rig activity slackened last year, averaging 54 rigs less per month than in 1956. The latter year itself had reflected a downturn of 22 rigs less per month than the peak of 1955, when a record average of 4867 rigs per month were operating.

In January, 1957, drilling rig activity had recorded an average number of rigs operating of 4625, an average of 123 rigs more than reflected in January of the peak year of 1955. However, the average in each of the following five months fell sharply. As compared with the corresponding months of 1956, February of 1957 recorded a decline of 95 rigs; March of last year slipped a significant 262 rigs; April declined 37; March was down 151; and June recorded a drop of 89 rigs.

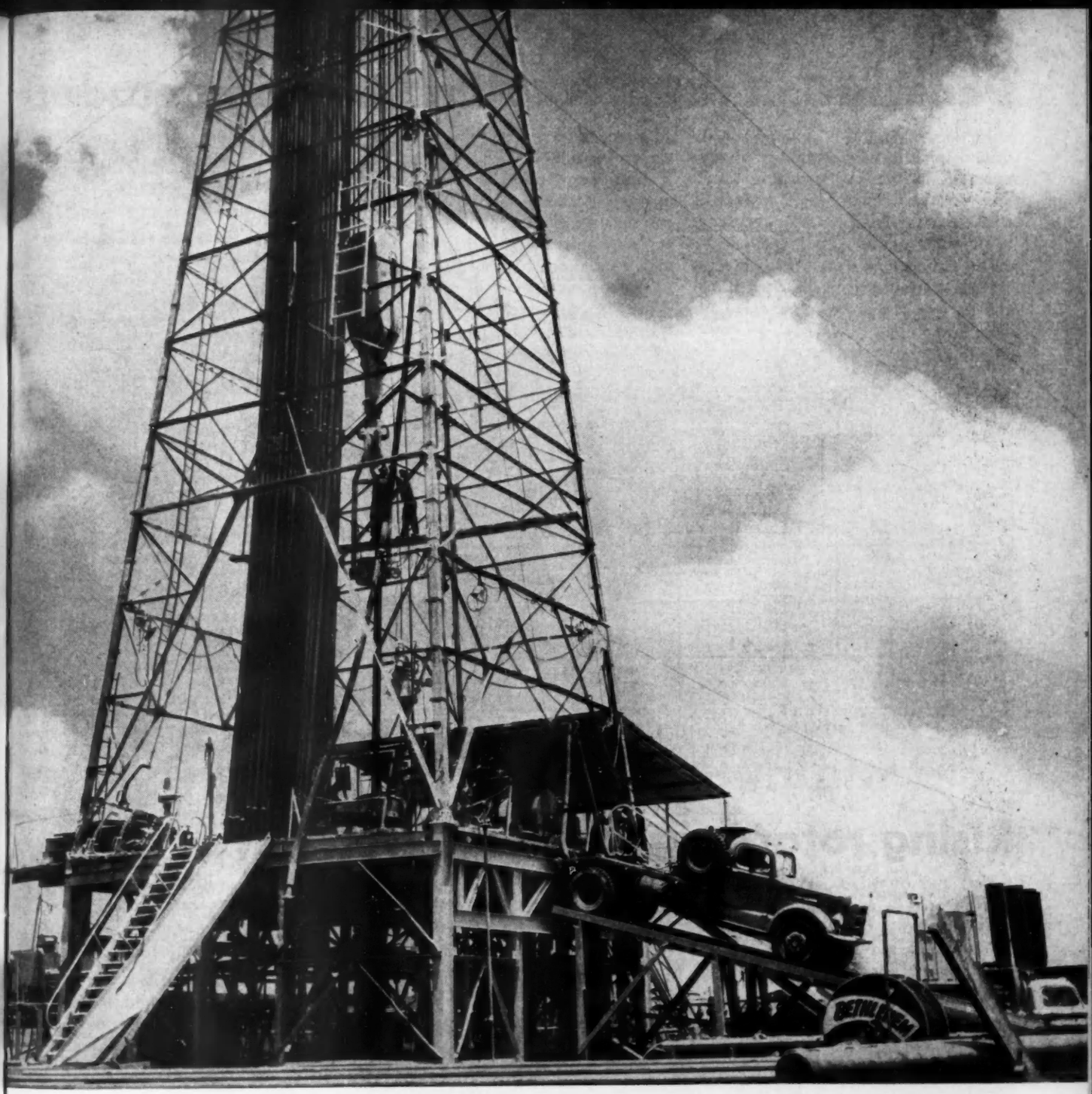
After June, however, the number of rigs in operation held steady at between 4844 rigs and 4983 rigs, until December. During the last month of 1957, a severe decline occurred, with only 4569 rigs in operation—276 rigs off the average monthly operating pace reached in December, 1956.

The third quarter of 1957 marked the only sustained period in which the 1957 operations outstripped those of the previous year.

Drilling Rigs in Use in U. S., by Years, by Months

Figures are for end of month, and include rigs drilling, rigging up, and shut down

YEAR	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg. for Year
1938....	3,968	3,928	3,973	3,971	3,582	4,830	3,737	3,869	3,742	3,876	3,676	3,434	3,799
1939....	3,583	3,391	3,448	3,630	3,695	3,726	3,567	3,718	3,625	3,905	3,981	3,924	3,683
1940....	3,990	4,277	4,472	4,327	4,655	4,502	4,235	4,194	3,821	3,921	4,030	3,894	4,193
1941....	3,814	3,952	4,121	4,287	4,335	4,598	4,819	4,984	4,693	4,672	4,746	4,336	4,446
1942....	3,816	3,067	2,979	2,859	2,868	2,905	3,179	3,007	2,953	3,094	2,962	2,797	3,041
1943....	2,691	2,653	2,732	2,756	2,743	2,852	3,015	3,201	3,031	3,548	3,676	3,595	3,041
1944....	3,427	3,568	3,702	3,819	3,934	4,278	4,411	4,528	4,566	4,738	4,665	4 640	4,190
1945....	4,270	4,154	4,159	4,374	4,637	4,394	4,424	4,289	4,356	4,521	4,426	4,637	4,387
1946....	4,337	4,229	4,212	4,405	4,399	4,124	4,235	4,201	4,474	4,410	4,551	4,654	4,353
1947....	4,390	4,402	4,379	4,470	4,603	4,802	4,992	5,163	4,979	4,897	4,871	4,945	4,741
1948....	4,699	4,542	4,626	4,989	5,067	5,090	5,013	5,058	5,116	5,229	5,060	4,908	4,950
1949....	4,511	4,490	4,368	4,265	4,276	4,097	4,015	4,118	4,258	4,247	4,485	4,355	4,290
1950....	4,180	4,169	4,114	4,224	4,518	4,760	4,712	4,804	4,633	4,773	4,649	4,665	4,517
1951....	4,275	4,339	4,435	4,600	4,831	4,762	4,989	4,988	5,237	5,260	5,234	5,182	4,844
1952....	5,010	5,015	5,092	5,093	5,151	5,037	4,694	4,508	4,687	4,659	4,689	4,649	4,857
1953....	4,585	4,585	4,611	4,661	4,693	4,935	4,878	4,997	4,879	4,939	5,047	4,802	4,784
1954....	4,597	4,743	4,732	4,709	4,716	4,656	4,616	4,439	4,467	4,581	4,685	4,680	4,635
1955....	4,502	4,456	4,683	4,713	4,816	4,997	4,965	5,019	4,987	5,124	5,160	4,987	4,867
1956....	4,597	4,677	4,883	4,886	5,019	5,019	4,775	4,819	4,828	4,865	4,882	4,885	4,845
1957....	4,625	4,582	4,621	4,749	4,868	4,930	4,983	4,945	4,887	4,844	4,889	4,569	4,791



WIRE ROPE AT WORK

This was a deep one, a real challenge to the crew. When photographed, the rig had already put the hole down nearly 14,000 ft, and a long string of casing was being set. Drilled by Falcon-Seaboard, the well was in the Gulf Coast country near Ridge, Louisiana.

To guard against mishaps during the lowering and setting of casing, the crew installed a husky new Bethlehem Purple Strand rotary line. A 1¼-in. 6x19 rope with IWRC, the line had the high strength needed for the tremendously heavy loads involved. And of course, after the casing was set, this tough wire rope was available for drilling work, where it would add many thousands of ton-miles to its service record.

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:

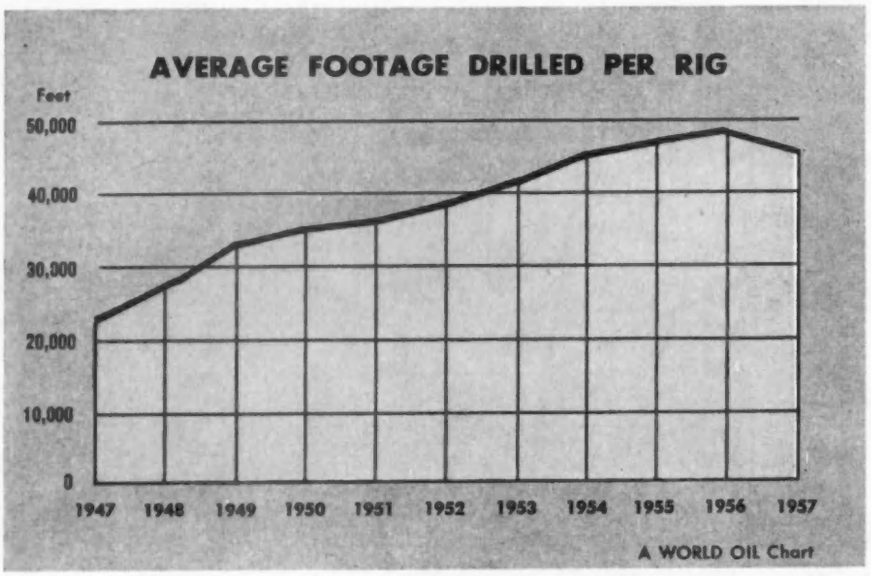
PETROLEUM • CONSTRUCTION • EXCAVATING • MINING • QUARRYING • LOGGING • MANUFACTURING

Penetration rates drop first time in decade

LESS WELLS AND footage were drilled in ratio to the number of rigs operated in the U. S. during 1957. This was the first time in 10 years that a substantial gain failed to be recorded in rig penetration rates.

With an average of 4791 rigs operated monthly during 1957, drilling activity was equal to an average of 11.1 wells and 45,795 feet of hole per rig during the year. This constituted a sharp drop from the drilling of an average of 12.1 wells and 48,583 feet per rig during 1956. It is necessary to go back to 1954 to find so few wells and footage drilled per rig.

The decrease in wells and footage drilled per rig was the result of an increase in average depth of wells, coupled with the operation of more older equipment by contractors.



Average Wells and Footage Drilled Annually Per Rig in U. S.

YEAR	Average Rigs Operating	Wells Drilled Per Rig	Footage Drilled Per Rig
1938.....	3,799	7.7	23,844
1939.....	3,683	7.6	23,221
1940.....	4,193	7.4	22,933
1941.....	4,446	7.3	22,345
1942.....	3,041	7.2	22,329
1943.....	3,041	6.7	20,385
1944.....	4,190	6.2	20,138
1945.....	4,387	6.1	21,195
1946.....	4,353	6.9	23,231
1947.....	4,741	7.0	23,796
1948.....	4,950	8.0	27,618
1949.....	4,290	9.1	32,312
1950.....	4,517	9.6	35,369
1951.....	4,844	9.5	36,490
1952.....	4,857	9.6	38,785
1953.....	4,784	10.3	41,478
1954.....	4,635	11.2	45,587
1955.....	4,867	11.5	46,955
1956.....	4,845	12.1	48,583
1957.....	4,791	11.1	45,795

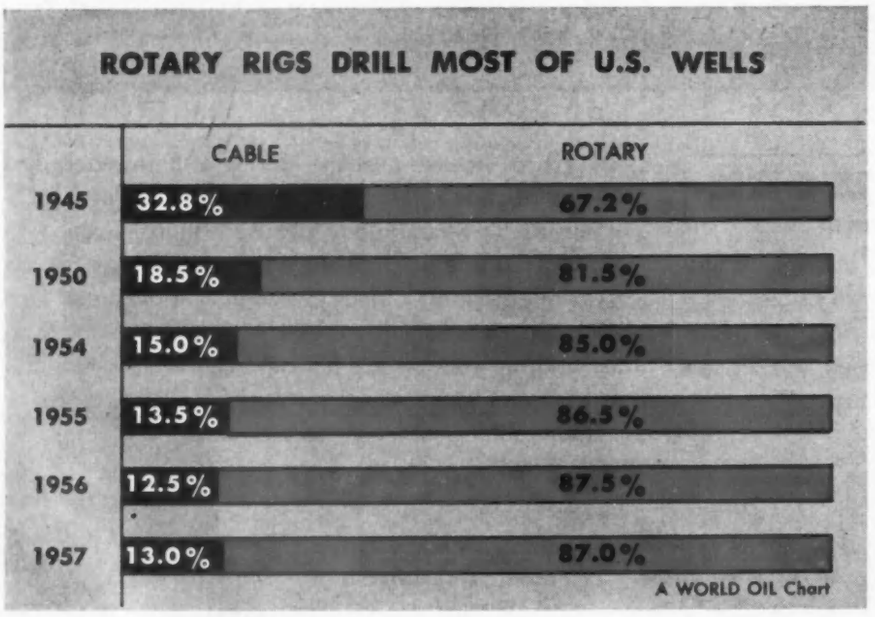
Rising rotary rig trend is reversed

THE USE OF rotary rigs, which had been favored by an expanding margin for more than a quarter of a century, last year suffered a slight percentage trend reversal for the first time during this period.

Rotary rigs were credited in 1957 with drilling an estimated 46,415—or 87 percent—of the 53,350 new wells completed in the U. S. during 1957.

The cable tool method was used in the drilling of an estimated 6935 wells —or 13 percent, an increase percentage-wise of 0.5 percent from 1956.

However, it is the concensus that the slight surge of interest in cable tools which occurred last year is not a shadow of a future trend. Rather, the reason for the percentage increase in the use of cable tools apparently lies in the reduction in drilling activity which was registered generally during 1957.



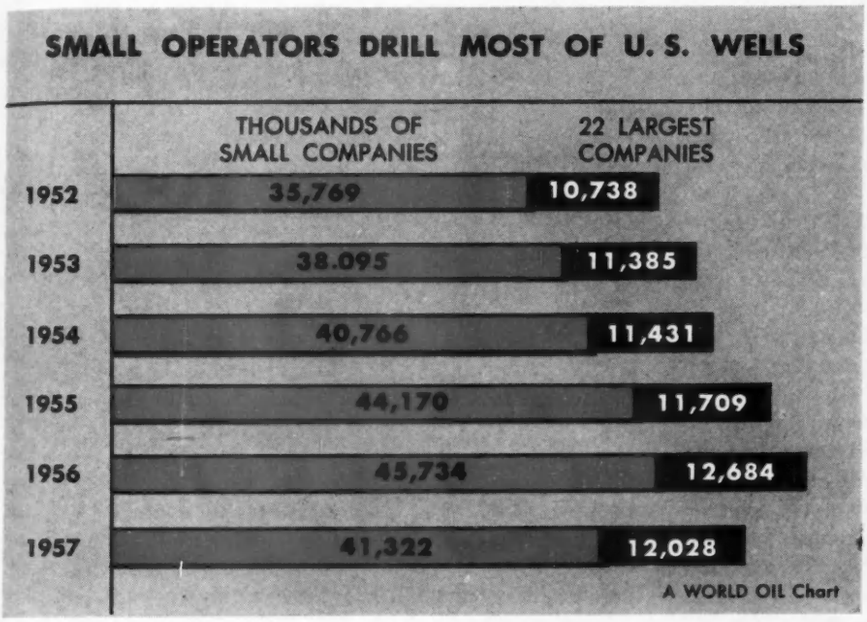
Estimated Number and Percentages of Wells Drilled in U. S. by Rotary and Cable Tool Methods, by Years

YEAR	Total New Wells	ROTARY		CABLE	
		Wells	Percent	Wells	Percent
1945.....	26,649	17,908	67.2	8,741	32.8
1946.....	30,230	20,859	69.0	9,371	31.0
1947.....	33,147	23,269	70.2	9,878	29.8
1948.....	39,477	29,410	74.5	10,067	25.5
1949.....	38,962	30,975	79.5	7,987	20.5
1950.....	43,307	35,295	81.5	8,012	18.5
1951.....	45,996	37,717	82.0	8,279	18.0
1952.....	46,507	38,368	82.5	8,139	17.5
1953.....	49,480	41,316	83.5	8,164	16.5
1954.....	52,197	44,368	85.0	7,829	15.0
1955.....	55,879	48,335	86.5	7,544	13.5
1956.....	58,418	51,116	87.5	7,302	12.5
1957.....	53,350	46,415	87.0	6,935	13.0

Big companies drill larger share of wells

SMALL COMPANY and individual operator participation in U. S. drilling activity declined during 1957. This was the second consecutive year in which small companies drilled a smaller portion of the U. S. wells.

Of the 53,350 wells completed in the U. S. during 1957, small companies and individual operators owned 41,322, or 77.5 percent of the total. The 22 largest U. S. producing companies owned 12,028 of the wells drilled in the nation during 1957, or 22.5 percent.



In 1956, a total of 58,418 new wells were drilled of which small operators accounted for 45,734 wells, or 78.3 percent, and the 22 largest producing companies were credited with 12,684 wells, or 21.7 percent.

By comparison, the small or individual operators drilled 79 percent, or 44,170 wells, of the total 55,879 wells completed in 1955. The 22 largest companies drilled 11,709 wells, or 21 percent, of the total that year.

The 22 largest U. S. producting companies include the following: Amerada Petroleum, Atlantic Refining, Carter Oil, Cities Service, Continental Oil, Gulf Oil, Humble Oil & Refining, Ohio Oil, Phillips Petroleum, Pure Oil, Richfield Oil, Shell Oil, Sinclair Oil, Skelly Oil, Socony-Mobil (including Magnolia Petroleum and General Petroleum), Standard Oil of California (including The California Company and Standard of Texas), Pan American Petroleum Corp., Standard of Ohio (including Sohio Petroleum), Sun Oil, Sunray, Mid-Continent Oil, The Texas Company, Tide Water Associated Oil, and Union Oil.

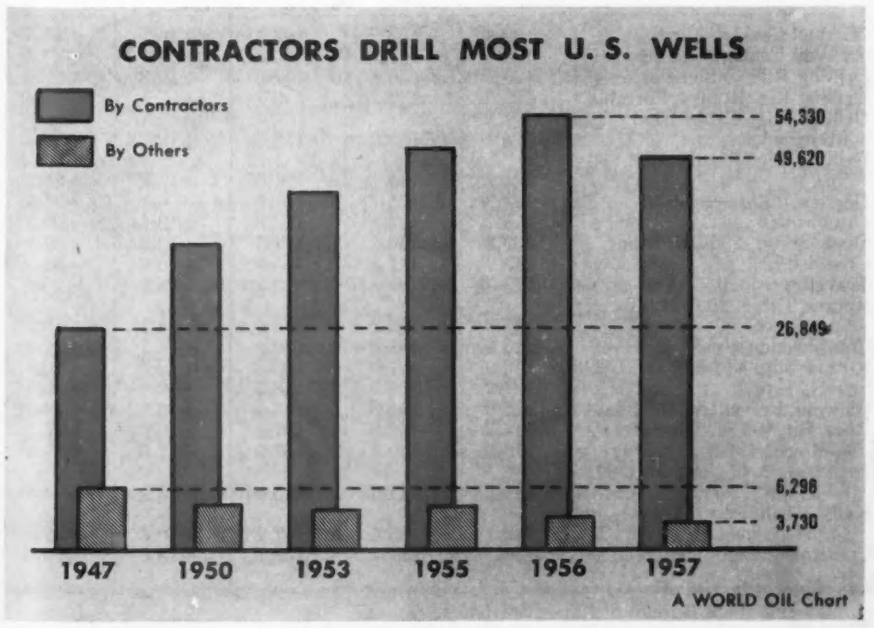
Drilling by contractors takes downturn

DUE TO THE decline in drilling experienced in 1957, when 5068 fewer wells were drilled than the 58,418 new completions recorded during the previous year, contractors drilled fewer wells and less footage in 1957 than in preceding recent years.

- Contractors drilled 49,616 wells which accounted for 93 percent of all wells drilled—a proportionate level identical with the record drilling which occurred during 1956.
- Similarly footage drilled by contractors totaled 204,045,932 feet, tantamount to a decline of 14,863,458 feet from the previous year's peak total of 218,909,390 feet.

Thus, the 1957 figure ends the 13-year string of unbroken annual well completion records established by contractors beginning in 1944.

However, even in a year beset with general oil industry reverses, drilling contractors in 1957 drilled more than twice the number of wells with which they are credited for 1946.



Wells and Footage Drilled in U. S. by Contractors, by Years

Year	U. S. Totals		Indicated Work by Contractors		
	New Wells	Footage	% of U.S.	Wells	Footage
1941..	32,510	99,347,714	72	23,407	71,503,354
1942..	21,990	67,903,053	70	15,393	47,532,137
1943..	20,349	61,991,857	75	15,262	46,492,893
1944..	25,786	84,378,457	78	20,113	65,815,196
1945..	26,649	92,982,113	80	21,319	74,385,690
1946..	30,230	101,124,813	81	24,486	81,911,096
1947..	33,147	112,816,124	81	26,849	91,381,000
1948..	39,477	136,709,153	82	32,371	112,101,505
1949..	38,962	138,616,941	85	33,118	117,824,400
1950..	43,307	159,761,732	88	38,118	140,590,324
1951..	45,996	176,757,221	90	41,396	159,081,496
1952..	46,507	188,160,597	91	42,321	171,226,143
1953..	49,480	198,431,603	91	45,027	180,572,756
1954..	52,197	211,296,158	92	48,021	194,392,465
1955..	55,879	228,529,688	92	51,409	210,247,313
1956..	58,418	235,386,441	93	54,329	218,909,390
1957..	53,350	219,404,228	93	49,616	204,045,932

Contract costs plummet as total jumps

THE TWO categories of expenses involved in U. S. drilling costs tilted in 1957 more than ever before as the average contract cost per foot plummeted to its lowest level since 1943, while the average total cost per foot climbed to its highest level in history.

The average contract cost per foot fell last year to $4.60 after averaging $5.12 for the previous 10 years. During the 10 years 1947-1956, the cost per foot received by drilling contractors reached two historical peaks—in 1952, when the figure amounted to $5.85, and in 1953, when the cost was $5.60.

However, the average total cost per foot of drilling during 1957 reached an even $14. During the 10 years 1947-1956, the average total cost per foot was $11.83. This total has reflected a rising trend since 1942.

The average total cost per foot includes materials and services required in addition to those provided by the drilling contractor.

By comparison, in 1935 the average contract drilling cost per foot of $5 was tantamount to 63 percent of the average total cost per foot of $8. In 1940, the contract price of $4 per foot equalled 53 percent of the average total cost per foot of $7.50. In 1945, contractors received $5 per foot on the average, or 56 percent, of the total overall cost of $9.

In 1955, the cost per foot for drilling contractors had dropped to $4.90, or 37 percent, of the average total cost per foot of $13.25 for that year. And in 1957, when the drilling contractors' proportionate share of average total cost per foot reached its lowest level, it accounted for only 33 percent—or $4.60 per foot—of the total cost of $14.00.

United States Drilling Cost Trends

Year	Average Contract Cost per Foot	Average Total Cost per Foot*	Year	Average Contract Cost per Foot	Average Total Cost per Foot
1935	$5.00	$8.00	1946	$5.00	$9.50
1936	4.75	7.75	1947	5.00	10.25
1937	4.50	7.50	1948	4.75	10.75
1938	4.25	7.50	1949	4.75	10.75
1939	4.25	7.50	1950	5.00	11.00
1940	4.00	7.50	1951	5.50	11.50
1941	4.25	7.25	1952	5.85	12.00
1942	4.00	7.50	1953	5.60	12.50
1943	4.50	8.00	1954	5.10	12.75
1944	4.75	8.25	1955	4.90	13.25
1945	5.00	9.00	1956	4.75	13.50
			1957	4.60	14.00

* Average total cost per foot includes materials and services in addition to those provided by the contractor.
Source: American Association of Oilwell Drilling Contractors.

Major drilling equipment prices soaring

WHOLESALE PRICES of major drilling equipment continued in 1957 their rising trend from 1947-1949 indices.

During the past year, all but one of the 21 major pieces of drilling equipment (see table at left) increased in price from the previous year. The single exception—the 133-foot-136-foot derrick—dropped only 0.1 percent from the previous year's price.

Alloy casing jumped 16.3 percent from 1956—the highest percentage increase recorded in 1957 for any of these 21 separate equipment items. Increases of between 14 percent and 15 percent were recorded on three of the items—combination hooks, rotary tables of the specification indicated in the accompanying table and carbon casing.

Each category of equipment experienced a significant price increase in 1957 as compared with 1952. Alloy casing again accounted for the largest increase—59.6 percent.

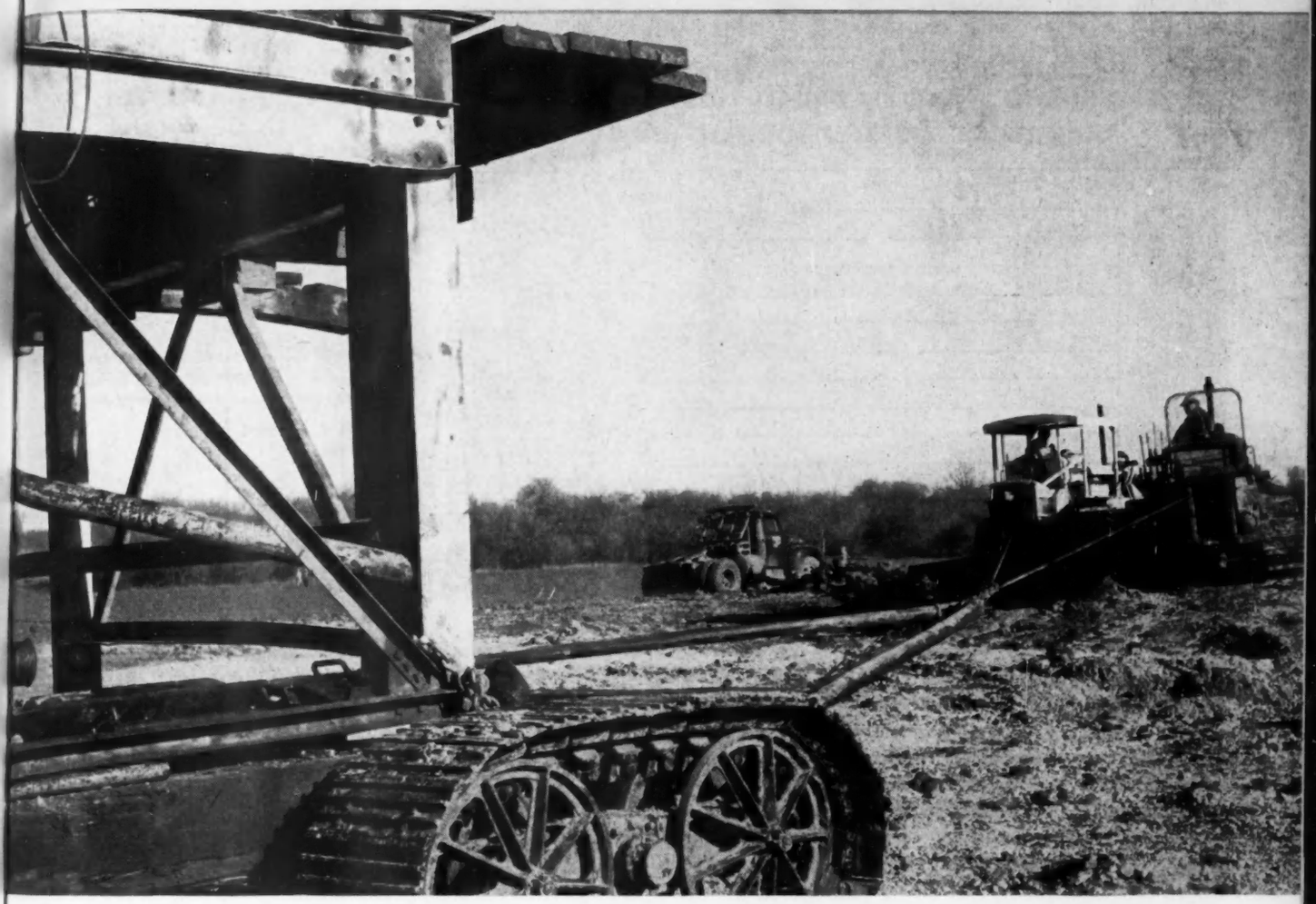
Wholesale Price Indexes of Major Drilling Equipment
(1947-1949 = 100)

	Year 1952	Year 1956	Nov. 1957	Percent Change Nov. '57-1956	Percent Change Nov. '57-1952
Oil Well Casing, Alloy	120.4	165.2	192.1	+16.3	+59.6
Oil Well Casing, Carbon	125.1	161.7	184.5	+14.1	+47.5
Drilling Rig, Cable, Portable	123.0	136.3	151.0	+10.8	+22.8
Drilling Rig, Rotary, Portable	120.0	132.2	142.1	+ 7.5	+18.4
Drilling Rig, Cable, Skid Mounted	124.4	143.0	158.3	+10.7	+27.3
Drilling Rig, Rotary, 600-800 hp	121.2	144.1	161.3	+11.9	+33.1
Derrick, 133-ft.—136-ft.	123.8	155.1	154.9	— 0.1	+25.1
Drawworks	118.2	134.9	153.2	+13.6	+29.6
Slush Pump, 250-325 Input	129.3	156.2	177.3	+13.5	+37.1
Crown Block	115.2	141.3	155.9	+10.3	+35.3
Traveling Block, 5 sheaves	119.3	131.8	143.2	+ 8.6	+20.0
Rotary Table, 20.5-21.0-in. spec. bevel	123.6	152.3	173.9	+14.2	+40.7
Combination Hook	113.9	133.0	150.4	+14.3	+32.5
Rotary Slip, 4½-6⅝-inc. O.D.	116.0	127.9	140.3	+ 9.7	+20.9
Swivel	127.2	161.7	178.5	+10.4	+40.3
Blowout Preventer, 10¾-in.	125.5	153.8	168.9	+ 9.8	+34.6
Rock Bit, 8-9-in. Diameter	116.5	139.8	157.4	+12.6	+35.1
Tool Joint, 4½-in.	116.0	140.3	157.9	+12.5	+36.1
Drill Collar, 6¾-6¼-in. O.D. 30-ft. long	114.3	111.6	115.9	+ 3.9	+ 1.4
Kelly (Drill Stem), 4¼-5½-in. sq. 54-ft. long	112.1	133.4	147.2	+10.3	+31.3
Cementing Equipment	106.2	127.2	138.7	+ 9.0	+30.6

Source: U.S. Bureau of Labor Statistics.

"WE OWN 17 D6s. THEY'RE THE STANDARD OF THE OILFIELD"

Perry McDonald, Superintendent, Simms Construction Co., Duncan, Oklahoma



Two of the D6 fleet owned by Simms Construction Co. are skidding a rig 1,100 feet in the Sherman Oil Field, Texas. Later they will build a roadway for the rig. Dependable and versatile, the CAT* D6 Tractor is described by Superintendent McDonald as "the standard of the oilfield."

"They have enough power, yet they can be moved anywhere with ease," he explained. "And they're built to take it. Under very severe conditions, we replace rollers and rails about every 2,500 hours. Seldom have to replace anything else before we trade them in."

This dependability, coupled with the tractor's all-around performance, lowers cost. In oil patches throughout the world, D6s are at work clearing brush, leveling sites, digging and filling pits, building roads, diking storage tank areas, leveling finished well sites and skidding rigs.

And now you get still greater production and economy. Today's D6 delivers 75 HP at the drawbar. It is equipped with the exclusive Caterpillar oil clutch, which increases machine availability and reduces service and maintenance costs.

Ask your Caterpillar Dealer to demonstrate this high-production equipment on any of your jobs. And remember, he backs all his machines with 24-hour service and quality Caterpillar parts.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

WANTED—
THE HARD WORK

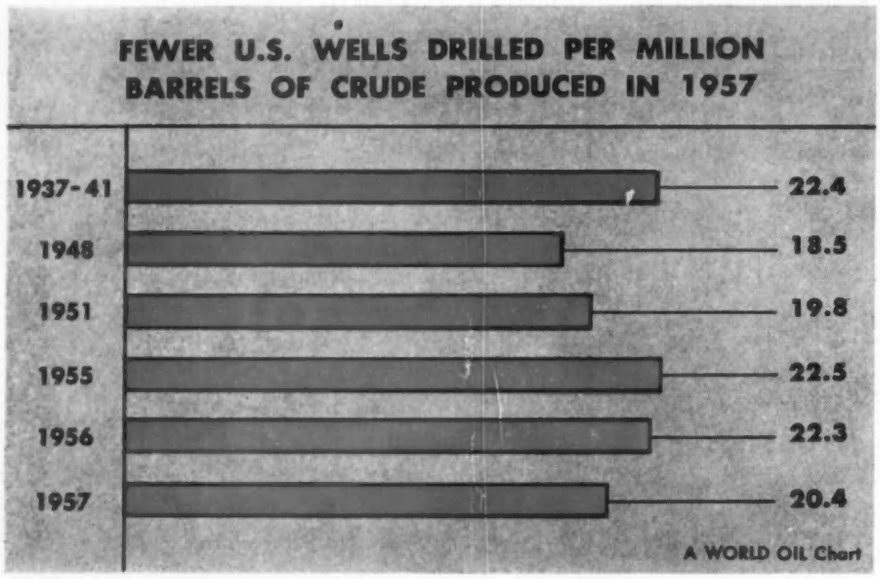
Ratio of drilling to production falls sharply

THE NUMBER of wells drilled in relation to the number of barrels produced in the U. S. suffered an abrupt drop during 1957. The general decline in drilling during the year resulted in 20.4 wells being completed for each million of barrels of crude oil produced in the period. By comparison, ratios of 22.3 and 22.5, respectively, were recorded during 1956 and 1955.

Thus, the 1957 ratio of drilling to production was lower than during any year since 1952.

During the war years 1942-1946 inclusive an average of 14.3 wells was drilled for each million barrels of crude oil produced—8.1 wells lower than the prewar 1937-1941 period. The only additional years in which the ratio was exceeded by the 1957 level were 1947 (17.1 wells), 1948 (18.5 wells), 1951 (19.8 wells), and 1952 (19.8 wells).

The highest ratio, as may be expected, occurred in the record drilling year of 1955, when 22.5 wells were drilled for each million barrels of crude oil produced during the year.



Wells Drilled Per Million Barrels Produced

1937-1941	22.4	1951	19.8
1942-1946	14.3	1952	19.8
1947	17.1	1953	20.5
1948	18.5	1954	22.2
1949	20.5	1955	22.5
1950	21.4	1956	22.3
		1957	20.4

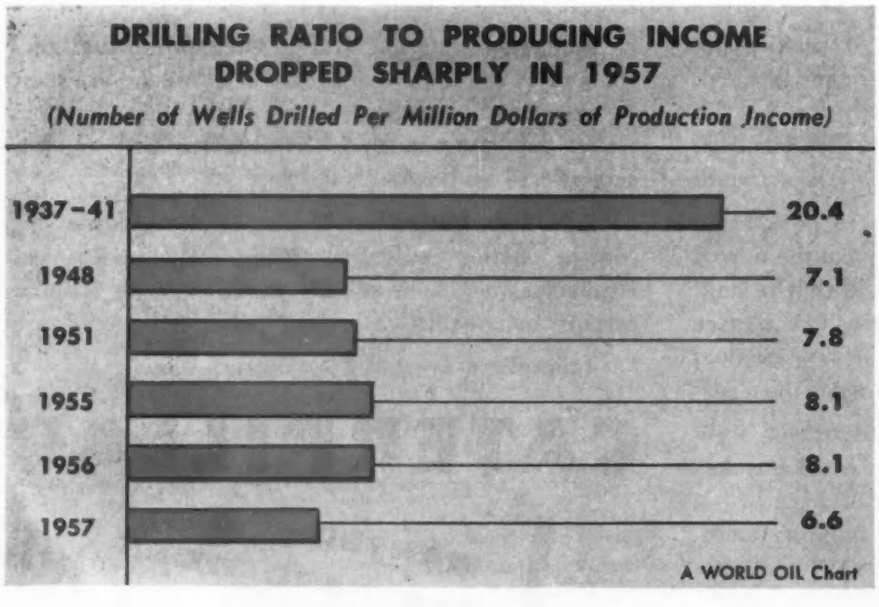
Ratio of drilling to producing income tumbles

THE RELATIONSHIP of the number of wells drilled in 1957 to income received from U. S. crude production during the year dropped to the lowest ratio in the past 20 years. An average of only 6.6 wells was drilled last year for each million dollars of production income.

This ratio was 1.5 wells lower than the preceding two years. The previous low was established in 1948, when an average of 7.1 wells was drilled for each million dollars of production income.

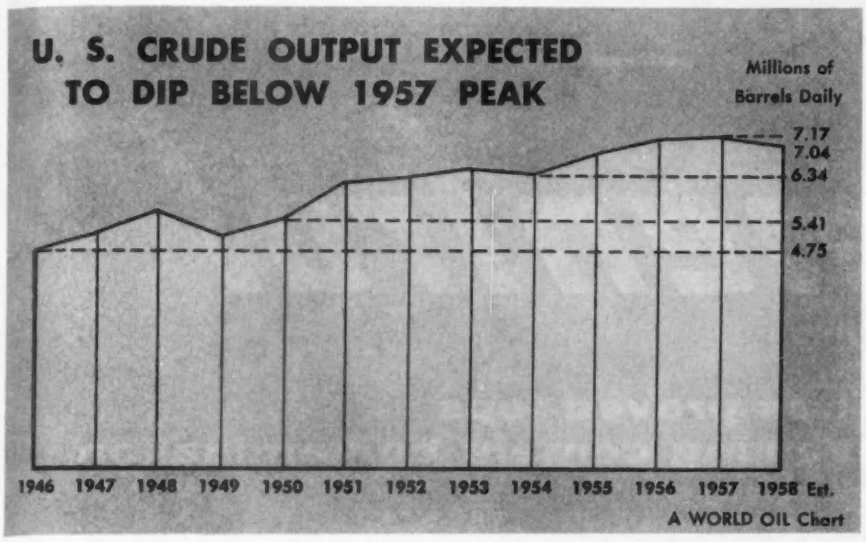
During the 1937-1941 period, the number of wells in this ratio amounted to 20.4, and during 1942-1946 the figure was 11.4 wells. Since these two periods, a smaller number of wells has been drilled.

However, the highest averages since World War II were 8.7 in 1947 and 8.5 wells in 1950. Identical averages of 8.1 wells were recorded in 1949, 1955 and 1956. An average of eight wells was drilled for each million dollars of production income in 1954.



Wells Drilled Per Million Dollars of Production Income

1937-1941	20.4	1951	7.8
1942-1946	11.4	1952	7.8
		1953	7.6
1947	8.7	1954	8.0
1948	7.1	1955	8.1
1949	8.1		
1950	8.5	1956	8.1
		1957	6.6


U. S. CRUDE OUTPUT EXPECTED TO DIP BELOW 1957 PEAK
Millions of Barrels Daily
7.17
7.04
6.34
5.41
4.75
1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 Est.
A WORLD OIL Chart

Decline of 1.9% forecast in U. S. crude production

U. S. CRUDE production is expected to decline 1.9 percent from the peak reached in 1957. Thus, it is anticipated that this year's crude oil output will amount to 7,037,000 barrels a day, 132,000 barrels less than last year.

This expected decrease is due to:

1. Smaller-than-normal increase in demand which will stem from reduced business activity, lower rate of automobile sales and less new-home construction.

2. Reduced export shipments as compared with the 1957 level required by the heavy emergency demand for Western Europe during the Suez crisis.

3. Oversupply of crude oil throughout the world.

However, the outlook generally is not a completely bleak one. Of course, the oil industry, accustomed to substantial annual increases, has viewed the smaller growth rates for two consecutive years with keen disappointment.

But the production of 7 million barrels of oil a day still is 500,000 barrels more than five years ago and 1.5 million barrels more than ten years ago. Even with the anticipated decline this year, domestic crude production will be above the 7 million-barrel-a-day level for the third consecutive year in the industry's history.

With an average value of $3.10 per barrel last year, total value of U. S. crude at the well amounted to $8.1 billion dollars, a record amount. With the expected decline in production this year, the total value will be slightly less than $8 billion, provided the 1957 average price per barrel remains constant.

Thus, 1958 is expected to account for the second highest total value in the industry's history.

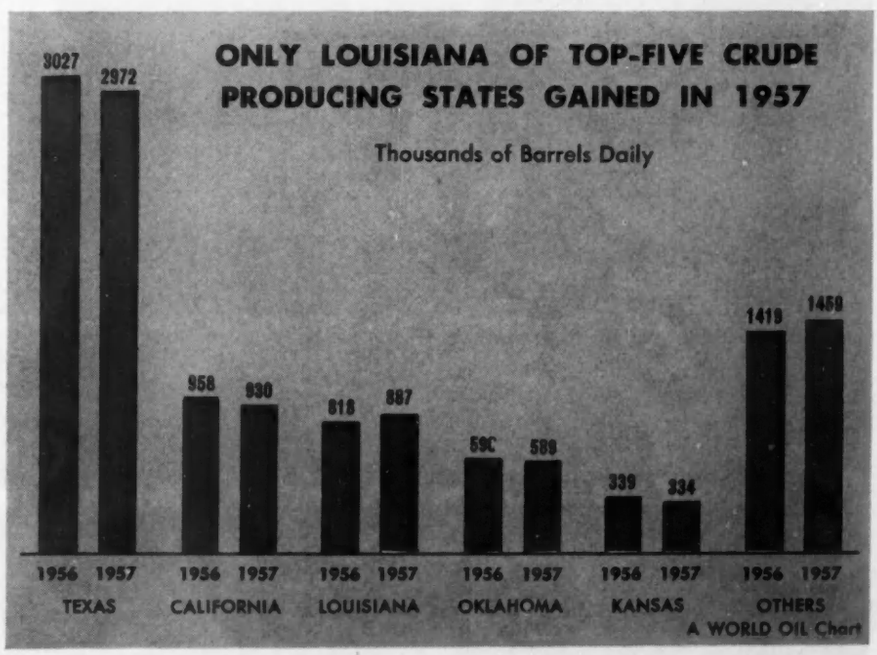
To keep what generally is viewed as a disagreeable situation within tolerable limits, the current oil supply outlook points to the necessity of the oil industry's exercising patience and restraint during 1958. The industry should not become too anxious to

U. S. Crude Oil Production

Source: U. S. Bureau of Mines, except Nov. and Dec., 1955, from American Petroleum Institute.

(THOUSANDS OF BARRELS)

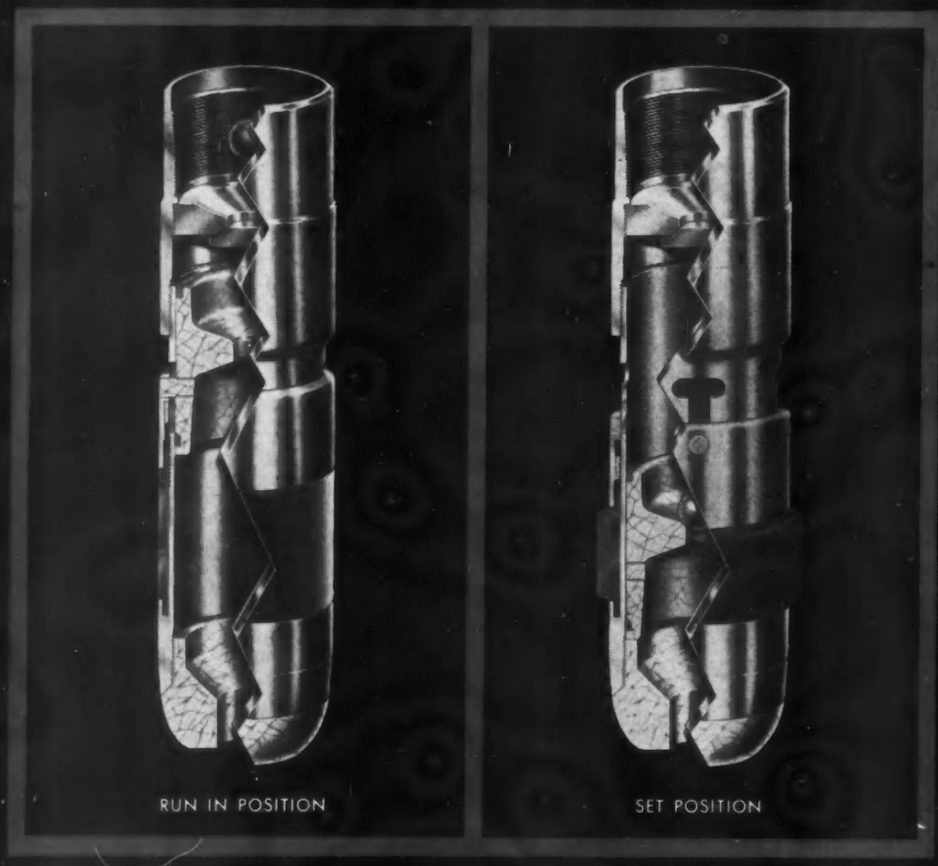
Year	Total	Daily	Year	Total	Daily
.....	.....	...	1938..	1,214,355	3,327
.....	.....	....	1939..	1,264,962	3,466
1918...	355,928	975	1940..	1,353,214	3,707
1919...	378,367	1,037			
1920...	442,929	1,213	1941..	1,402,228	3,842
			1942..	1,386,645	3,799
1921...	472,183	1,294	1943..	1,505,613	4,125
1922...	557,531	1,528	1944..	1,677,904	4,584
1923...	732,407	2,007	1945..	1,713,655	4,695
1924...	713,940	1,956			
1925...	763,743	2,092	1946..	1,733,939	4,750
			1947..	1,856,987	5,088
1926...	770,874	2,112	1948..	2,020,185	5,520
1927...	901,129	2,469	1949..	1,841,940	5,046
1928...	901,474	2,469	1950..	1,973,574	5,407
1929...	1,007,323	2,760			
1930...	898,011	2,460	1951..	2,247,711	6,158
			1952..	2,289,836	6,256
1931...	851,081	2,332	1953..	2,357,082	6,458
1932...	785,159	2,151	1954..	2,314,988	6,342
1933...	905,656	2,481	1955..	2,484,428	6,807
1934...	908,065	2,488			
1935...	996,596	2,730	1956..	2,617,283	7,151
			1957..	2,617,467	7,171
1936...	1,099,687	3,013			
1937...	1,279,160	3,505	1958 Est...	2,568,505	7,037



ON TOP FOR ONE REASON

Cementrol*

* because it has proved tops
in preventing cement contamination
of producing zones



PESA
PARTNERS IN PETROLEUM PROGRESS

LARKIN PACKER COMPANY, INC.
WAXAHACHIE, TEXAS

LARKIN
...Through Your Supply Store

LARKIN LEADERSHIP HAS BEEN EARNED BY YEARS OF DEPENDABLE PERFORMANCE

increase producing rates. Trends in stocks and supplies must be watched closely since they should govern the speed with which the industry proceeds.

One strong note of encouragement also lies in the expectation that producing rates this year are likely to be considerably above the drastically reduced levels of the past six months. The forecast of 7,037,000 barrels daily is in sharp contrast to the production of only 6,800,000 barrels a day during the last half of 1957.

Too, the imposition of crude oil import restrictions and recent reductions in crude oil stocks have strengthened the industry's economic position considerably, although further improvement likely will be slow.

During the past year, extremely wide fluctuations in demand created many unusually difficult problems for the industry. For example, supplying Western Europe during the Suez crisis led U. S. crude production into a 750,000-barrel-a-day rise—from less than 7 million barrels a day in October, 1956, to more than 7.7 million barrels in March, 1957. During the same period, more than 30 million barrels of oil was taken from U. S. crude oil stocks—reducing the stocks from 286 million barrels in October, 1956, to less than 255 million barrels by the end of March, 1957.

Many factors indicate future increasing fluctuation from year to year. While the general trend will be upward, growth will not be as assured or as steady as in the past.

U. S. Crude Oil Production, by States and Districts, 1956, 1957, and Cumulative Since Beginning

(Sources: U. S. Bureau of Mines, Except November and December, 1957, from API; Texas districts from API and Texas Railroad Commission; and Louisiana district cumulatives from other sources.)

STATE or DISTRICT	Annual Production (Thousand Bbls.)		Daily Average Production (Actual Bbls.)			Year's Production As % of U.S.		Cumulative Prod. to Jan. 1, 1958 (Thousand Bbls.)	
	1956	1957	1956	1957	% Diff. '56-'57	1956	1957	Total	As of % U. S.
Alabama	**3,069**	**5,415**	**8,385**	**14,836**	**+ 76.9**	**0.12**	**0.20**	**18,135**	**0.03**
Arkansas	**29,355**	**30,517**	**80,203**	**83,607**	**+ 4.2**	**1.12**	**1.17**	**1,002,392**	**1.73**
California	**350,754**	**339,610**	**958,330**	**930,430**	**— 2.9**	**13.41**	**12.97**	**11,099,735**	**19.19**
Colorado	**58,516**	**54,927**	**159,877**	**150,484**	**— 5.9**	**2.23**	**2.10**	**453,918**	**0.78**
Florida	**479**	**460**	**1,309**	**1,260**	**— 3.8**	**0.02**	**0.02**	**5,292**	**0.01**
Illinois	**82,346**	**78,279**	**224,986**	**214,461**	**— 4.7**	**3.15**	**2.99**	**1,994,520**	**3.45**
Indiana	**11,513**	**12,722**	**31,456**	**34,854**	**+ 10.8**	**0.44**	**0.49**	**283,110**	**0.49**
Kansas	**124,204**	**121,854**	**339,350**	**333,843**	**— 1.6**	**4.74**	**4.65**	**2,930,462**	**5.06**
Kentucky	**17,628**	**16,780**	**48,163**	**45,972**	**— 4.6**	**0.67**	**0.64**	**351,021**	**0.61**
Louisiana	**299,421**	**323,801**	**818,078**	**887,118**	**+ 8.4**	**11.44**	**12.37**	**4,434,648**	**7.67**
North Louisiana	46,927	46,086	128,214	126,252	— 1.5	1.80	1.76	1,096,915	1.90
South Louisiana	252,494	277,715	689,864	760,856	+ 10.3	9.64	10.61	3,005,517	5.20
Michigan	**10,740**	**10,217**	**29,344**	**27,992**	**— 4.6**	**0.42**	**0.39**	**405,961**	**0.70**
Mississippi	**40,824**	**39,569**	**111,539**	**108,407**	**— 2.8**	**1.55**	**1.51**	**545,402**	**0.94**
Missouri	**65**	**58**	**178**	**159**	**— 10.7**	**0.01**	**0.01**	**953**	**....**
Montana	**21,760**	**27,081**	**59,453**	**74,194**	**+ 24.8**	**0.83**	**1.03**	**277,425**	**0.48**
Nebraska	**16,204**	**19,362**	**44,273**	**53,046**	**+ 19.8**	**0.62**	**0.74**	**73,498**	**0.13**
Nevada	**64**	**26**	**174**	**71**	**— 59.4**	**....**	**....**	**187**	**....**
***New Mexico**	**87,893**	**94,287**	**240,141**	**258,318**	**+ 7.6**	**3.36**	**3.60**	**1,204,194**	**2.08**
Southeast New Mexico	86,479	92,103	236,278	252,335	+ 6.8	3.31	3.51	1,185,887	2.05
Northwest New Mexico	1,414	2,184	3,863	5,984	+ 54.9	0.05	.08	18,640	0.03
New York	**2,748**	**2,692**	**7,508**	**7,375**	**— 1.8**	**0.11**	**0.11**	**200,908**	**0.35**
North Dakota	**13,495**	**13,544**	**36,871**	**37,106**	**+ 0.6**	**0.52**	**0.51**	**50,964**	**0.09**
Ohio	**4,785**	**5,112**	**13,074**	**14,005**	**+ 7.1**	**0.18**	**0.20**	**649,229**	**1.12**
Oklahoma	**215,862**	**214,965**	**589,778**	**588,940**	**— 0.2**	**8.25**	**8.21**	**7,660,833**	**13.24**
Pennsylvania	**8,230**	**8,189**	**22,486**	**22,435**	**— 0.2**	**0.31**	**0.32**	**1,192,447**	**2.06**
South Dakota	**32**	**32**	**87**	**88**	**+ 1.1**	**....**	**....**	**131**	**....**
Tenneessee	**9**	**7**	**25**	**19**	**— 24.0**	**....**	**....**	**591**	**....**
***Texas**	**1,107,808**	**1,084,733**	**3,026,753**	**2,971,843**	**— 1.8**	**42.33**	**41.44**	**20,994,545**	**36.30**
Dist. 1: South Central	20,145	19,464	55,040	53,326	— 3.1	0.77	0.74	414,682	0.72
Dist. 2: Middle Gulf	56,891	52,976	155,438	145,140	— 6.6	2.17	2.02	945,142	1.63
Dist. 3: Upper Gulf	165,421	160,775	451,963	440,475	— 2.6	6.32	6.14	3,793,144	6.56
Dist. 4: Lower Gulf-S.W.	88,553	82,567	241,945	226,209	— 6.5	3.38	3.15	1,557,483	2.69
Dist. 5: East Central	16,064	13,775	43,890	37,739	— 14.0	0.61	0.52	629,515	1.09
Dist. 6: Northeast	124,798	116,849	340,973	320,131	— 6.1	4.77	4.46	3,495,802	6.04
Dist. 7-B: North Central	57,360	57,342	156,719	157,100	+ 0.2	2.19	2.19	801,003	1.38
Dist. 7-C: West Central	66,804	58,469	182,522	160,188	— 12.2	2.55	2.23	664,795	1.15
Dist. 8: West	387,096	400,461	1,057,624	1,097,143	+ 3.7	14.79	15.29	4,838,812	8.36
Dist. 9: North	77,228	76,286	211,002	209,001	— 1.0	2.95	2.91	1,590,022	2.75
Dist. 10: Panhandle	35,857	38,251	97,768	104,796	+ 7.0	1.37	1.46	894,162	1.54
Utah	**2,466**	**4,015**	**6,738**	**11,000**	**+ 63.3**	**0.09**	**0.15**	**17,338**	**0.03**
Virginia	**4**	**10**	**11**	**27**	**+145.5**	**....**	**....**	**246**	**....**
Washington	**....**	**....**	**....**	**3**	**....**	**....**	**....**	**1**	**....**
West Virginia	**2,179**	**2,220**	**5,953**	**6,082**	**+ 2.2**	**0.09**	**0.09**	**458,978**	**0.79**
Wyoming	**104,830**	**106,982**	**286,417**	**293,099**	**+ 2.3**	**4.00**	**4.09**	**1,540,247**	**2.66**
Unclassified	**....**	**....**	**....**	**....**	**....**	**....**	**....**	**572**	**0.01**
Total United States	**2,617,283**	**2,617,467**	**7,150,941**	**7,171,074**	**+ 0.3**	**100.00**	**100.00**	**57,847,883**	**100.00**

* Data on Louisiana, New Mexico, and Texas by districts are from various sources and do not necessarily agree with state totals which are on Bureau of Mines basis.

United States Crude Oil Production, By States, By Years (Part 1)

Data in thousands of barrels; from *Mineral Resources and Minerals Yearbook*, except where otherwise indicated in footnotes.

Year	Alabama	Arkansas	California	Colorado	Florida	Illinois	Indiana	Kansas	Kentucky	Louisiana	Michigan	Mississippi	Missouri	Montana	Nebraska	Nevada	New Mexico
1875	.....	.....	.....	.....	.....	.....	.....	.....	E	.....	.....	.....	.....	.....	.....	.....	.....
1876	.....	.....	12	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1877	.....	.....	13	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1878	.....	.....	15	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1879	.....	.....	20	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1880	.....	.....	40	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1881	.....	.....	100	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1882	.....	.....	129	.....	.....	.....	.....	.....	G E	.....	.....	.....	.....	.....	.....	.....	.....
1883	.....	.....	143	.....	.....	.....	.....	.....	G5	.....	.....	.....	.....	.....	.....	.....	.....
1884	.....	.....	262	.....	.....	.....	.....	.....	G4	.....	.....	.....	.....	.....	.....	.....	.....
1885	.....	.....	325	.....	.....	.....	.....	.....	G5	.....	.....	.....	.....	.....	.....	.....	.....
1886	.....	.....	377	.....	.....	.....	.....	.....	G5	.....	.....	.....	.....	.....	.....	.....	.....
1887	.....	.....	678	76	.....	.....	.....	.....	G5	.....	.....	.....	.....	.....	.....	.....	.....
1888	.....	.....	690	298	.....	.....	.....	.....	G5	.....	.....	.....	.....	.....	.....	.....	.....
1889	.....	.....	303	317	.....	1	33	1	G5	.....	.....	.....	H	.....	.....	.....	.....
1890	.....	.....	307	369	.....	1	64	1	G6	.....	.....	.....	H	.....	.....	.....	.....
1891	.....	.....	324	666	.....	1	137	1	G9	.....	.....	.....	H	.....	.....	.....	.....
1892	.....	.....	385	824	.....	1	698	5	G7	.....	.....	.....	H	.....	.....	.....	.....
1893	.....	.....	470	594	.....	1	2,335	18	G3	.....	.....	.....	H	.....	.....	.....	.....
1894	.....	.....	706	516	.....	H	3,689	40	G2	.....	.....	.....	H	.....	.....	.....	.....
1895	.....	.....	1,209	438	.....	H	4,386	44	G2	.....	.....	.....	H	.....	.....	.....	.....
1896	.....	.....	1,253	361	.....	H	4,681	114	G2	.....	.....	.....	H	.....	.....	.....	.....
1897	.....	.....	1,903	385	.....	1	4,122	81	G H	.....	.....	.....	H	.....	.....	.....	.....
1898	.....	.....	2,257	444	.....	H	3,731	72	G6	.....	.....	.....	H	.....	.....	.....	.....
1899	.....	.....	2,642	390	.....	H	3,848	70	G18	.....	.....	.....	H	.....	.....	.....	.....
1900	.....	.....	4,325	317	.....	H	4,874	75	G62	.....	J	.....	J2	.....	.....	.....	.....
1901	.....	.....	8,787	461	.....	H	5,757	179	G137	.....	J	.....	J2	.....	.....	.....	.....
1902	.....	.....	13,984	397	.....	H	7,481	332	G185	549	J	.....	J1	.....	.....	.....	.....
1903	.....	.....	24,382	484	.....	.....	9,186	932	G554	918	J	.....	J3	.....	.....	.....	.....
1904	.....	.....	29,649	501	.....	.....	11,339	4,251	G998	2,959	J	.....	J3	.....	.....	.....	.....
1905	.....	.....	33,428	376	.....	181	10,964	I3,750	G1,217	8,910	J	.....	J3	.....	.....	.....	.....
1906	.....	.....	33,099	328	.....	4,397	7,674	I3,627	G1,214	9,077	J	.....	J3	.....	.....	.....	.....
1907	.....	.....	39,748	332	.....	24,282	5,128	2,410	G821	5,000	J	.....	J4	.....	.....	.....	.....
1908	.....	.....	44,855	380	.....	33,686	3,283	1,801	728	5,789	J	.....	J15	.....	.....	.....	.....
1909	.....	.....	55,472	311	.....	30,898	2,296	1,264	639	3,060	J	.....	J6	.....	.....	.....	.....
1910	.....	.....	73,011	240	.....	33,143	2,160	1,128	469	6,841	J	.....	J4	.....	.....	.....	.....
1911	.....	.....	81,134	227	.....	31,317	1,695	1,279	472	10,721	J	.....	J8	.....	.....	.....	.....
1912	.....	.....	87,269	206	.....	28,602	970	1,593	484	9,263	K	.....	.....	.....	.....	.....	.....
1913	.....	.....	97,788	189	.....	23,894	956	2,375	525	12,499	K	.....	K	.....	.....	.....	K
1914	.....	.....	99,775	223	.....	21,920	1,336	3,104	503	14,309	K	.....	K	.....	.....	.....	.....
1915	.....	.....	86,592	208	.....	19,042	876	2,823	437	18,192	K	.....	K	.....	.....	.....	.....
1916	.....	.....	90,952	197	.....	17,714	769	8,738	L1,202	15,248	K	.....	K	45	.....	.....	.....
1917	.....	.....	93,878	121	.....	15,777	760	36,536	L3,088	11,392	K	.....	.....	100	.....	.....	.....
1918	.....	.....	97,532	143	.....	13,366	878	45,451	L4,368	16,043	K	.....	.....	69	.....	.....	.....
1919	.....	.....	101,183	121	.....	11,960	972	33,048	9,278	17,188	K	.....	K	90	.....	.....	K
1920	.....	K	103,377	111	.....	10,774	945	39,005	8,738	35,714	.....	.....	K	340	.....	.....	K
1921	.....	10,473	112,600	108	.....	10,043	1,158	36,456	9,013	27,103	.....	.....	K	1,509	.....	.....	K
1922	.....	12,712	138,468	97	.....	9,383	1,087	31,766	8,973	35,376	.....	.....	K	2,449	.....	.....	K
1923	.....	36,610	262,876	86	.....	8,707	1,043	28,250	8,069	24,919	.....	.....	K	2,782	.....	.....	K
1924	.....	46,028	228,933	445	.....	8,081	935	28,836	7,407	21,124	.....	.....	.....	2,815	.....	.....	98
1925	.....	77,398	232,492	1,226	.....	7,863	829	38,357	6,759	20,272	4	.....	.....	4,091	.....	.....	1,060
1926	.....	58,332	224,673	2,768	.....	7,760	808	41,498	6,274	23,201	94	.....	.....	7,727	.....	.....	1,666
1917	.....	40,005	231,196	2,831	.....	6,994	852	41,069	6,719	22,818	439	.....	.....	5,058	.....	.....	1,226
1928	.....	32,096	231,811	2,774	.....	6,462	1,052	38,596	7,359	21,847	594	.....	.....	4,015	.....	.....	943
1929	.....	24,917	292,534	2,358	.....	6,319	981	42,813	7,775	20,554	4,528	.....	.....	3,980	.....	.....	1,830
1930	.....	19,702	227,329	1,656	.....	5,736	994	41,638	7,389	23,272	3,911	.....	.....	3,349	.....	.....	10,189
1931	.....	14,791	188,830	1,545	.....	5,039	840	37,018	6,456	21,804	3,789	.....	.....	2,830	.....	.....	15,227
1932	.....	12,051	178,128	1,136	.....	4,673	806	34,848	6,287	21,807	6,910	.....	K	2,457	.....	.....	12,455
1933	.....	11,686	172,010	919	.....	4,244	737	41,976	4,608	25,168	7,942	K	K	2,273	.....	.....	14,116
1934	.....	11,182	174,305	1,139	.....	4,479	838	46,482	4,860	32,869	10,603	K	K	3,603	.....	.....	16,864
1935	.....	11,008	207,832	1,560	.....	4,322	777	54,843	5,258	50,330	15,776	K	K	4,603	.....	.....	20,483
1936	.....	10,469	214,773	1,650	.....	4,475	822	58,317	5,633	80,491	11,928	.....	K	5,868	.....	.....	27,223
1937	.....	11,764	238,521	1,605	.....	7,499	844	70,761	5,484	90,924	16,628	.....	K	5,805	.....	.....	38,854
1938	.....	18,180	249,749	1,412	.....	24,075	995	60,064	5,821	95,208	18,745	.....	K	4,946	.....	.....	35,759
1939	.....	21,238	224,354	1,404	.....	94,912	1,711	60,703	5,621	93,646	23,462	107	40	5,960	2	.....	37,637
1940	.....	25,775	223,881	1,626	.....	147,647	4,978	66,139	5,188	103,584	19,753	4,400	44	6,728	276	.....	39,129
1941	.....	26,327	230,263	2,150	.....	132,393	7,411	83,242	4,762	115,908	16,359	15,327	47	7,526	1,898	.....	39,569
1942	.....	26,628	248,326	2,199	.....	106,391	6,743	97,636	4,534	115,785	21,754	28,833	36	8,074	1,237	.....	31,544
1943	.....	27,600	284,188	2,320	4	82,260	5,283	106,178	7,883	123,592	20,768	18,807	36	7,916	635	.....	38,896
1944	43	29,418	311,793	3,083	12	77,413	5,118	98,762	9,621	129,645	18,490	16,337	45	8,647	417	.....	39,555
1945	181	28,613	326,482	5,036	30	75,094	4,868	96,415	10,325	131,051	17,267	19,062	45	8,420	305	.....	37,351
1946	380	28,375	314,713	11,856	57	75,297	6,726	97,218	10,578	143,669	17,074	24,298	51	8,825	293	.....	36,814
1947	396	29,948	333,132	15,702	259	66,459	6,095	105,132	9,397	160,128	16,215	34,925	55	8,742	229	.....	40,926
1948	466	31,682	340,074	17,878	290	64,808	6,974	110,908	8,801	181,458	16,871	45,761	44	9,382	215	.....	47,969
1949	462	29,986	332,942	23,587	441	64,501	9,696	101,868	8,803	190,826	16,517	37,966	49	9,118	330	.....	47,645
1950	735	31,108	327,607	23,303	487	62,028	10,699	107,586	10,381	208,965	15,826	38,236	32	8,109	1,547	.....	47,367
1951	1,020	29,798	354,561	27,823	596	60,243	11,100	114,522	11,622	232,281	13,927	37,039	24	8,958	2,558	.....	52,719
1952	1,279	29,440	359,450	30,381	591	60,089	12,037	114,807	11,918	243,929	13,251	36,310	21	9,606	2,660	.....	58,681
1953	1,694	29,681	365,085	36,402	543	59,026	12,823	114,566	11,518	256,632	12,285	35,620	39	11,920	6,344	.....	70,441
1954	1,584	29,130	355,865	46,206	548	66,798	11,204	119,317	13,791	246,558	12,028	34,240	96	14,195	7,783	33	74,820
1955	1,411	28,369	354,812	52,653	495	81,423	10,988	121,669	15,518	271,010	11,266	37,741	72	15,654	11,203	64	82,958
1956	3,069	29,355	350,754	58,516	479	82,346	11,513	124,204	17,628	299,421	10,740	40,824	65	21,760	16,204	64	87,893
1957P	5,415	30,517	339,610	54,927	460	78,279	12,722	121,854	16,780	323,801	10,217	39,569	58	27,081	19,362	26	94,287
Total	18,135	1,002,392	11,099,735	453,918	5,292	1,994,520	283,110	2,930,462	351,021	4,434,648	405,961	545,402	953	277,425	73,498	187	1,204,194

A Utah prod. est. at 3,650 bbls. in 1939; 3,126 bbls. in 1940; and 189,726 bbls. cum. through 1940.

B *Petroleum in U. S. and Possessions*, by Arnold and Kemnitzer, shows for Alas. following data: 1904-1919, est., 56,000 bbls.; 1920, 11,000 bbls; 1921, 10,000 bbls.; 1922-1928, est., 73,000 bbls.; total, 1904-1928, 150,000 bbls.

C "Unclassified" includes 1912, Alas. and Mich.; 1913, Alas., Mich., Mo. and N. Mex.; 1914-16, Alas., Mich. and Mo.; 1917-18, Alas. and Mich.; 1919, Alas., Mich., Mo. and N. Mex.; 1920. Alas., Ark., Mo., N. Mex. and Ut.; 1921-23, Alas., Mo. and N. Mex.; 1924-31, Alas. and Ut.; 1932, Alas., Mo. and Ut.; 1933, Alas., Mis., Mo. and Ut.; 1934, Mis., Mo. and Ut.; 1935, Mis., Mo., Ten. and Ut.; 1936-1938; Mo., Ten. and Ut.

D Pa. and N. Y. separated in years 1864-1881, by aid of *Petroleum in U. S. and Possessions*, by Arnold and Kemnitzer.

E *Petroleum in U. S. and Possessions* gives following additional estimates not shown by official *Mineral Resources*; O., 1860-1875, 200,000 bbls.; W. Va., 1860-1875, 2,800,000 bbls.; Ky., 1860-1882, 161,000 bbls.

F N. Y. incl. with Pa.

United States Crude Oil Production, By States, By Years (Part 2)

Data in thousands of barrels; from *Mineral Resources and Minerals Yearbook*, except where otherwise indicated in footnotes.

New York, Ohio, Pennsylvania, West Virginia, and U. S. Total, 1859-1885

Year	New York	Pennsylvania	U.S.	Value at Wells $1,000	[O] Value per Bbl. $	Year	New York	Pennsylvania	Total U.S.	Value at Wells $1,000	[O] Value per Bbl. $	Year	New York	Ohio	Pennsylvania	W. Va.	Total U.S.	Value at Wells $1,000	[O] Value per Bbl. $
1856	.....	.....	.....	.....	.....	1866	[D]144	[D]3,454	3,598	13,455	3.75	1876	[D]359	32	[D]8,610	120	9,133	22,983	2.52
1857	.....	.....	.....	.....	.....	1867	[D]134	[D]3,213	3,347	8,067	2.40	1877	[D]525	30	[D]12,610	172	13,350	31,789	2.38
1858	.....	.....	.....	.....	.....	1868	[D]146	[D]3,500	3,646	13,217	3.62	1878	[D]607	38	[D]14,557	180	15,397	18,045	1.17
1859	.....	2	2	32	20.00	1869	[D]169	[D]4,046	4,215	23,730	5.60	1879	[D]787	29	[D]18,898	180	19,914	17,211	.86
1860	.....	500	500	4,800	9.60	1870	[D]211	[D]5,050	5,261	20,504	3.90	1880	[D]1,041	39	[D]24,987	179	26,286	24,601	.94
1861	.....	2,114	2,114	1,036	.52	1871	[D]208	[D]4,997	5,205	22,591	4.40	1881	[D]1,095	34	[D]26,281	151	27,661	25,448	.92
1862	.....	3,057	3,057	3,210	1.05	1872	[D]252	[D]6,041	6,293	21,440	3.75	1882	6,685	40	23,368	128	30,350	23,631	.78
1863	.....	2,611	2,611	8,226	3.15	1873	[D]396	[D]9,498	9,894	18,100	1.80	1883	4,004	47	19,125	126	23,450	25,790	1.10
1864	[D F H]	[D F]2,116	2,116	20,897	8.15	1874	[D]437	[D]10,490	10,927	12,648	1.15	1884	3,231	90	20,541	90	24,218	20,596	.85
1865	[D]100	[D]2,398	2,498	16,460	6.59	1875	[D]352	[D]8,436	8,788	7,368	.97	1885	2,658	662	18,118	91	21,859	19,198	.88

New York, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wyoming, and U. S. Total, 1886 to Now

Year	New York	N. Dakota	Ohio	Oklahoma	Pennsylvania	S. Dakota	Tennessee	Texas	[A] Utah	Va.	[Washington]	W. Va.	Wyoming	[B] Alaska	[C] Unclassified	Total United States	Value at Wells $1,000	[O] Value per Bbl. $
1886	2,151	.....	1,783	.....	23,647	.....	[G]	.....	.....	.....	.....	102	.....	.....	.....	28,065	19,996	.71
1887	2,075	.....	5,023	.....	20,281	.....	[G]	.....	.....	.....	.....	145	.....	.....	.....	28,283	18,877	.67
1888	1,789	.....	10,011	.....	14,700	.....	[G]	.....	.....	.....	.....	119	.....	.....	.....	27,612	17,948	.65
1889	1,897	.....	12,472	.....	19,591	.....	[G]	[H]	.....	.....	.....	544	.....	.....	.....	35,164	26,963	.77
1890	1,658	.....	16,125	.....	26,800	.....	[G]	.....	.....	.....	.....	493	.....	.....	.....	45,824	35,365	.77
1891	1,585	.....	17,740	[H]	31,424	.....	[G]	[H]	.....	.....	.....	2,406	.....	.....	.....	54,293	30,527	.56
1892	1,273	.....	16,363	[H]	27,149	.....	[G]	[H]	.....	.....	.....	3,810	.....	.....	.....	50,515	25,907	.51
1893	1,032	.....	16,249	[H]	19,283	.....	[G]	[H]	.....	.....	.....	8,446	.....	.....	.....	48,431	28,950	.60
1894	942	.....	16,792	[H]	18,078	.....	[G]	[H]	.....	.....	.....	8,577	2	.....	.....	49,344	35,522	.72
1895	913	.....	19,545	[H]	18,231	.....	[G]	[H]	.....	.....	.....	8,120	4	.....	.....	52,892	57,632	1.09
1896	1,205	.....	23,941	[H]	19,379	.....	[G]	1	.....	.....	.....	10,020	3	.....	.....	60,960	58,519	.96
1897	1,279	.....	21,561	1	17,983	.....	[G]	66	.....	.....	.....	13,090	4	.....	.....	60,476	40,874	.68
1898	1,205	.....	18,739	.....	14,743	.....	[G]	546	.....	.....	.....	13,615	6	.....	.....	55,364	44,193	.80
1899	1,321	.....	21,142	.....	13,054	.....	[G]	669	.....	.....	.....	13,911	6	.....	.....	57,071	64,604	1.13
1900	1,301	.....	22,363	6	13,258	.....	[G]	836	.....	.....	.....	16,196	6	.....	.....	63,621	75,989	1.19
1901	1,207	.....	21,648	10	12,625	.....	[G]	4,394	.....	.....	.....	14,177	5	.....	.....	69,389	66,417	.96
1902	1,120	.....	21,014	37	12,064	.....	[G]	18,084	.....	.....	.....	13,513	6	.....	.....	88,767	71,179	.80
1903	1,163	.....	20,480	139	11,355	.....	[G]	17,956	.....	.....	.....	12,900	9	.....	.....	100,461	94,694	.94
1904	1,113	.....	18,877	1,367	11,126	.....	[G]	22,241	.....	.....	.....	12,645	12	[N]	.....	117,081	101,175	.86
1905	1,118	.....	16,347	[I]8,264	10,437	.....	[G]	28,136	.....	.....	.....	11,578	8	.....	.....	134,717	84,157	.62
1906	1,243	.....	14,788	[I]18,091	10,257	.....	[G]	12,568	.....	.....	.....	10,121	7	.....	.....	126,494	92,445	.73
1907	1,212	.....	12,207	43,524	10,000	.....	[G]	12,323	[M]	.....	.....	9,095	[M]9	[N]	.....	166,095	120,107	.72
1908	1,160	.....	10,859	45,799	9,424	.....	.....	11,207	[M]	.....	.....	9,523	[M]18	.....	.....	178,527	129,079	.72
1909	1,135	.....	10,633	47,859	9,299	.....	.....	9,534	[M]	.....	.....	10,745	[M]20	.....	.....	183,171	128,329	.70
1910	1,054	.....	9,916	52,029	8,795	.....	.....	8,899	[M]	.....	.....	11,753	[M]115	.....	.....	209,557	127,900	.61
1911	953	.....	8,817	56,069	8,248	.....	.....	9,526	[M]	.....	.....	9,796	[M]187	[N]	.....	220,449	134,045	.61
1912	874	.....	8,969	51,427	7,838	.....	.....	11,735	[M]	.....	.....	12,129	[M]1,572	[K]	4	222,935	164,213	.74
1913	948	.....	8,781	63,579	7,917	.....	.....	15,010	[N]	.....	.....	11,567	2,407	[K]	11	248,446	237,121	.95
1914	939	.....	8,536	73,632	8,170	.....	.....	20,068	[N]	.....	.....	9,680	3,560	[K]	8	265,763	214,125	.81
1915	888	.....	7,825	97,915	7,838	.....	.....	24,943	[N]	.....	.....	9,265	4,246	[K]	14	281,104	179,463	.64
1916	874	.....	7,744	107,072	7,593	.....	[L]1	27,645	[N]	.....	.....	8,731	6,234	[K]	8	300,767	330,900	1.10
1917	880	.....	7,751	107,508	7,733	.....	[L]12	32,413	[N]	.....	.....	8,379	8,978	[K]	10	335,316	522,635	1.56
1918	809	.....	7,285	103,347	7,408	.....	[L]8	38,750	[N]	.....	.....	7,867	12,596	[K]	8	355,928	703,944	1.98
1919	851	.....	7,736	86,911	8,137	.....	15	79,366	[N]	.....	.....	8,327	13,172	[K]	12	378,367	760,266	2.01
1920	906	.....	7,400	106,206	7,438	.....	14	96,868	[K]	.....	.....	8,249	16,831	[K]	13	442,929	1,360,745	3.07
1921	988	.....	7,335	114,634	7,418	.....	12	106,166	.....	.....	.....	7,822	19,333	[K]	12	472,183	814,745	1.73
1922	1,000	.....	6,781	149,571	7,425	.....	10	118,684	.....	.....	.....	7,021	26,715	[K]	13	557,531	895,111	1.61
1923	1,250	.....	7,085	160,929	7,609	.....	8	131,023	.....	.....	.....	6,358	44,785	[K]	18	732,407	978,430	1.34
1924	1,440	.....	6,811	173,538	7,486	.....	10	134,522	[K]	.....	.....	5,920	39,498	[K]	13	713,940	1,022,683	1.43
1925	1,695	.....	7,212	176,768	8,097	.....	24	144,648	[K]	.....	.....	5,763	29,173	[K]	12	763,743	1,284,960	1.68
1926	1,956	.....	7,272	179,195	8,961	.....	43	166,916	[K]	.....	.....	5,946	25,776	[K]	8	770,874	1,447,760	1.88
1927	2,242	.....	7,593	277,775	9,526	.....	60	217,389	[K]	.....	.....	6,023	21,307	[K]	7	901,129	1,172,830	1.30
1928	2,603	.....	7,015	249,857	9,956	.....	46	257,320	[K]	.....	.....	5,661	21,461	[K]	6	901,474	1,054,880	1.17
1929	3,377	.....	6,743	255,004	11,820	.....	19	296,876	[K]	.....	.....	5,574	19,314	[K]	7	1,007,323	1,280,417	1.27
1930	3,647	.....	6,486	216,486	12,803	.....	21	290,457	[K]	.....	.....	5,071	17,868	[K]	7	898,011	1,070,200	1.19
1931	3,363	.....	5,327	180,574	11,892	.....	6	332,437	[K]	.....	.....	4,472	14,834	[K]	7	851,081	550,630	.65
1932	3,508	.....	4,644	153,244	12,412	.....	5	312,478	[K]	.....	.....	3,876	13,418	[K]	16	785,159	680,460	.87
1933	3,181	.....	4,235	182,251	12,624	.....	5	402,609	[K]	.....	.....	3,815	11,227	[K]	30	905,656	608,000	.67
1934	3,804	.....	4,234	180,107	14,478	.....	10	381,516	[K]	.....	.....	4,095	12,556	.....	41	908,065	904,825	1.00
1935	4,236	.....	4,082	185,288	15,810	.....	[K]	392,666	[K]	.....	.....	3,902	13,755	.....	65	996,596	961,440	.96
1936	4,663	.....	3,847	206,555	17,070	.....	[K]	427,411	[K]	.....	.....	3,847	14,582	.....	63	1,099,687	1,199,820	1.09
1937	5,478	.....	3,559	228,839	19,189	.....	[K]	510,318	[K]	.....	.....	3,845	19,166	.....	77	1,279,160	1,513,340	1.18
1938	5,045	.....	3,298	174,994	17,426	.....	[K]	475,850	[K]	.....	.....	3,684	19,022	.....	82	1,214,355	1,373,060	1.13
1939	5,098	.....	3,156	159,913	17,382	.....	50	483,528	4	.....	.....	3,580	21,454	.....	.....	1,264,962	1,294,470	1.02
1940	4,999	.....	3,159	156,164	17,353	.....	24	493,209	3	.....	.....	3,444	25,711	.....	.....	1,353,214	1,385,440	1.02
1941	5,185	.....	3,510	154,702	16,750	.....	12	505,572	4	.....	.....	3,433	29,878	.....	.....	1,402,228	1,602,000	1.14
1942	5,421	.....	3,543	140,690	17,779	.....	9	483,097	.....	.....	.....	3,574	32,812	.....	.....	1,386,645	1,643,470	1.19
1943	5,059	.....	3,322	123,152	15,757	.....	10	594,343	.....	2	.....	3,349	34,253	.....	.....	1,505,613	1,809,020	1.20
1944	4,697	.....	2,937	124,616	14,118	.....	8	746,699	.....	4	.....	3,070	33,356	.....	.....	1,677,904	2,032,960	1.21
1945	4,648	.....	2,828	139,299	12,515	.....	8	754,710	.....	4	.....	2,879	36,219	.....	.....	1,713,655	2,094,250	1.22
1946	4,863	.....	2,908	134,794	12,996	.....	10	760,215	.....	23	.....	2,929	38,977	.....	.....	1,733,939	2,442,550	1.41
1947	4,762	.....	3,108	141,019	12,690	.....	8	820,210	.....	61	.....	2,617	44,772	.....	.....	1,856,987	3,577,890	1.93
1948	4,621	.....	3,600	154,455	12,667	.....	6	903,498	.....	33	.....	2,692	55,032	.....	.....	2,020,185	5,245,080	2.60
1949	4,425	.....	3,483	151,660	11,374	.....	18	744,834	637	43	.....	2,839	47,890	.....	.....	1,841,940	4,674,770	2.54
1950	4,143	.....	3,383	164,599	11,859	.....	12	829,874	1,228	21	.....	2,808	61,631	.....	.....	1,973,574	4,963,380	2.51
1951	4,254	25	3,140	186,869	11,345	.....	14	1,010,270	1,305	12	.....	2,757	68,929	.....	.....	2,247,711	5,690,410	2.53
1952	4,242	1,549	3,350	190,435	11,233	.....	15	1,022,139	1,737	10	.....	2,602	68,074	.....	.....	2,289,836	5,785,230	2.53
1953	3,800	5,183	3,610	202,570	10,649	.....	16	1,019,164	1,807	8	.....	3,038	82,618	.....	.....	2,357,082	6,316,980	2.68
1954	3,257	6,025	3,880	185,851	9,107	37	13	974,275	1,905	7	.....	2,902	93,533	.....	.....	2,314,988	6,424,930	2.78
1955	2,094	11,143	4,353	202,817	8,531	30	13	1,053,297	2,227	4	.....	2,320	99,483	.....	.....	2,484,428	6,870,390	2.77
1956	2,748	13,495	4,785	215,862	8,230	32	9	1,107,808	2,466	4	.....	2,179	104,830	.....	.....	2,617,283	7,249,874	2.77
1957[P]	2,692	13,544	5,112	214,965	8,189	32	7	1,084,733	4,015	10	1	2,220	106,982	.....	.....	2,617,467	8,114,148	3.10
Total	200,908	50,964	649,229	7,660,833	1,192,447	131	591	20,994,545	17,338	246	1	458,978	1,540,247	.....	572	57,847,883	104,680,701	1.80

[G] Tenn. incl. with Ky., 1876-1907, incl.

[H] Less than 500 bbls.

[I] Figures for Okla. and Kan. for years 1905-1906 shown together by *Mineral Resources;* here divided by aid of *Petroleum in U. S. and Possessions*, by Arnold and Kemnitzer.

[J] Mich. shown with Mo. in 1900-1911.

[K] Included under "Unclassified."

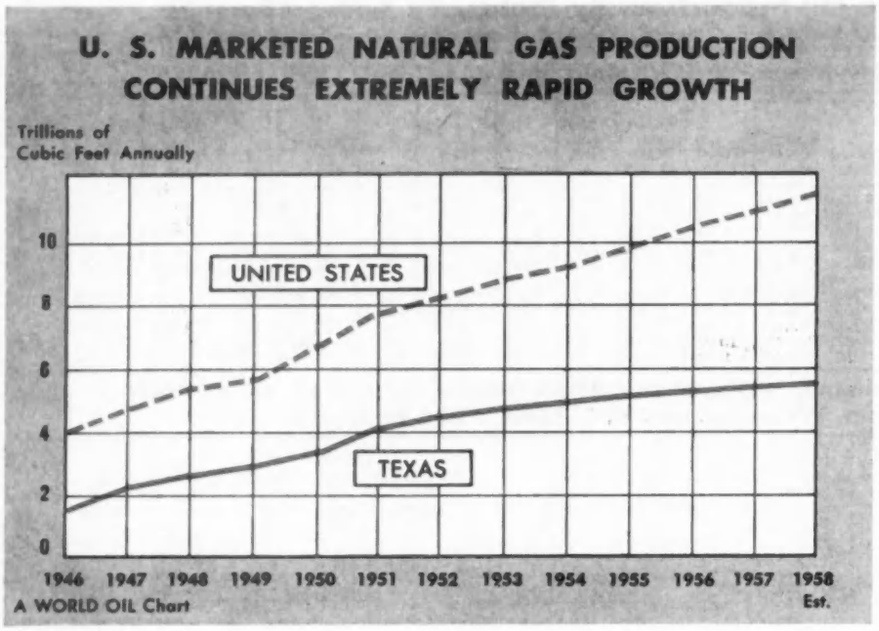
[L] Ky. and Tenn. in 1916-18 obtained with aid of *Mineral Resources and Petroleum in U. S. and Possessions.*

[M] Small prod. of Ut. (mostly used as fuel) shown with Wyo.

[N] Little prod. but no record available.

[O] Average price per bbl. for 1859-1875 from *Petroleum in U. S. and Possessions;* remainder from *Mineral Resources* and *Minerals Yearbook* except 1950 and 1951 estimated.

[P] Bureau of Mines for first 10 months; Nov. and Dec. est. by World Oil, from weekly reports of API and other sources.



Smaller increase forecast for natural gas production

THE TEMPORARY business slump will combine with incentive-destroying federal regulations to put the brakes on marketed natural gas production growth in 1958.

WORLD OIL predicts that marketed production will slightly exceed 11 trillion cubic feet this year, for a 2.3 percent increase over the 10.8 trillion cubic feet of gas marketed in 1957. In comparison, U. S. Bureau of Mines figures show that marketed production increased 6.9 percent last year over 1956. And the 1956 total of 10.1 trillion cubic feet was 7.4 percent greater than the natural gas marketed during the previous year.

Average value of marketed gas production in 1957 was 11.2 cents per thousand cubic feet at the well, according to Bureau estimates. And total value at the wells was estimated at $1.2 billion, compared with $1.1 billion in 1956.

Why Federal Control? Price to users (industry and home), including transmission and distribution costs, averaged 42.5 cents per thousand cubic feet last year.

In view of the current Harris-O'Hara gas bill debate, it is interesting to note that the cost to users has increased 4.5 cents per thousand cubic feet (from 38 to 42.5 cents) since federal control of natural gas at the point of production went into effect in June, 1954. Wellhead prices accounted for 1.1 cents, one-fourth of the increase. Transmission companies and distributors accounted for the remaining 3.4 cents price increase.

During the five years before federal regulation (1949-1953), when producers were not regulated as the transmission and distributing companies were, wellhead prices increased 2.9 cents per thousand cubic feet, 28.8 percent of the users' total price increase of 10.1 cents (from 25.4 to 35.5 cents). The remaining 7.2 cents increase in user prices was accounted for by distributing and federally controlled transmission companies.

In short, for the difficulties it has caused the natural gas industry, federal control so far has done very little —if anything—to help the consumers.

Demand Increases. Despite the crippling effects of federal control, natural gas producers are faced with the mounting problem of supplying the rapidly growing list of consumers. At the end of 1957, the number of utility customers was 30.9 million, an increase of 3 percent over the 1956 average of 29.5 million. Utility customers receiving natural gas averaged 27 million during the past year, a gain of 1.8 million customers, or 7 percent more than the 25.2 million natural gas customers served during 1956.

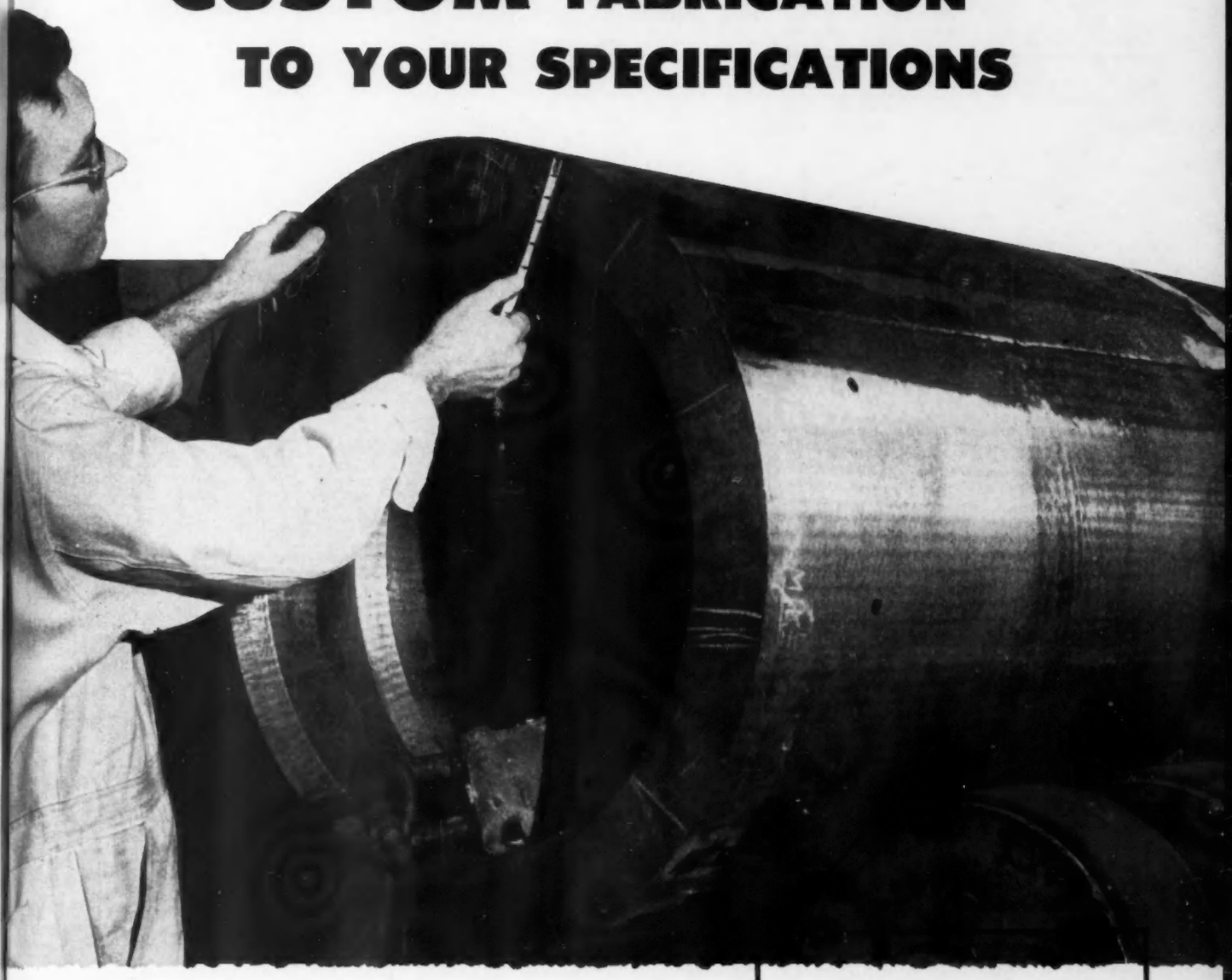
The industry's 18 million house-heating customers now represent 63 percent of all residential gas customers.

Gross Withdrawals and Disposition of Natural Gas in U. S., in 1956, by States, in Million Cubic Feet
(Source: U. S. Bureau of Mines Mineral Market Report MMS No. 2713)

STATE	GROSS WITHDRAWALS[1]			DISPOSITION		
	From Gas Wells	From Oil Wells	Total	Marketed Production[2]	Repressuring	Vented and Wasted[3]
Arkansas	16,000	37,000	53,000	30,162	16,269	6,569
California	144,000	623,000	767,000	504,458	254,872	7,670
Colorado	31,000	99,000	130,000	54,205	32,500	43,295
Illinois	700	28,300	29,000	6,177	1,870	20,953
Indiana	100	4,000	4,100	791	4	3,305
Kansas	519,000	68,000	587,000	526,091	2,141	58,768
Kentucky	71,000	4,000	75,000	73,687	.....	1,313
Louisiana	1,720,000	430,000	2,150,000	1,886,302	190,768	72,930
Maryland	4,619	.....	4,619	4,619	.....	.....
Michigan	9,500	5,500	15,000	10,911	2,498	1,591
Mississippi	206,000	82,000	288,000	185,137	66,654	36,209
Montana	21,000	6,000	27,000	25,847	145	1,008
Nebraska	16,500	9,000	25,500	13,541	850	11,109
New Mexico	425,000	239,000	664,000	626,340	1,470	36,190
New York	4,000	400	4,400	4,098	.....	302
North Dakota	1,000	16,000	17,000	11,725	.....	5,275
Ohio	26,000	4,000	30,000	25,368	57	4,575
Oklahoma	517,000	540,000	1,057,000	678,603	123,561	254,836
Pennsylvania	104,000	3,000	107,000	104,508	117	2,375
Texas	4,196,000	1,793,000	5,989,000	4,999,889	720,905	268,206
Utah	17,000	1,000	18,000	17,268	.....	732
Virginia	2,941	.....	2,941	2,926	.....	15
West Virginia	202,000	4,000	206,000	204,717	127	1,156
Wyoming	52,000	70,000	122,000	84,398	11,840	25,762
Other States[4]	190	155	345	155	.....	190
Total: 1956	8,306,550	4,066,355	12,372,905	10,081,923	1,426,648	864,334
1955	7,841,958	3,877,836	11,719,794	9,405,351	1,540,804	773,639

[1] Marketed production plus quantities used in repressuring, vented, and wasted.
[2] Comprises gas sold or consumed by producers, including losses in transmission, amounts added to storage, and increases in gas in pipelines.
[3] Partly estimated. Includes direct waste on producing properties and residue blown to the air.
[4] Alabama, Arizona, Florida, Missouri, and Tennessee.

CUSTOM FABRICATION TO YOUR SPECIFICATIONS



KNOWLEDGE • EXPERIENCE • FACILITIES

These are the three vital requirements necessary for the economical production of custom quality fabricated steel products.

Knowledge gained in over 30 years in the production of fabricated steel products.

Experience in design provided by expert Mechanical, Petroleum, Chemical, Civil and Electrical Engineers, including many FIRSTS that have become standards of the petroleum industry.

Facilities unrivaled, National Tank Company operates one of the largest and most complete steel fabricating plants in the United States, over 8 acres under one roof.

SPECIFICATIONS: 35¼" O.D. x 25" I.D. x 17'11" Long, W.P. 5,000 PSI, T.P. 7,500 PSI, Shipping Weight, 27,760 lbs., Stress Relieved and Gamma Ray 100%.

This 5½" thick steel plate vessel and heads for same were formed, welded and machined in National's Tulsa plant. This blow-out preventer is another example of custom fabrication by National.

It's a National®

NATIONAL TANK COMPANY

TULSA, OKLAHOMA

U. S. Production and Consumption of Natural Gas, by Years, Part 1, 1938-1947

(Source: U. S. Bureau of Mines, except as noted)

UNITS EXPLAINED IN FOOTNOTE NO. 1

CLASSIFICATION[1]	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Production										
Wells: Gas wells drilled (Incl. Condensate wells)	2,236	2,145	2,382	2,911	2,597	2,290	3,069	3,227	3,000	3,235
Producing gas wells, Dec. 31 (Incl. Condensate wells)	53,770	53,530	53,880	55,500	56,150	57,200	58,780	60,600	62,740	63,676
Production: Gross Production	3,061,200	3,333,500	3,694,100	4,103,500	4,453,900	4,942,560	5,614,220	5,902,180	6,190,200	6,733,230
Source: (1). From gas wells	1,566,975	1,832,880	2,095,180	2,490,590	2,885,090	3,208,780	3,649,830	3,887,727	3,807,500	3,769,768
(2). From oil wells	1,494,225	1,500,680	1,598,920	1,612,910	1,568,810	1,733,780	1,964,390	2,014,453	2,382,700	2,963,462
Disposition: (1). Repressuring	101,551	171,401	362,916	644,379	752,619	824,803	882,979	1,061,951	1,038,242	1,083,119
(2). Vented and wasted	649,106	677,311	655,967	630,212	626,782	684,115	1,010,285	896,208	1,102,033	1,067,938
(3). Marketed production	2,295,562	2,476,756	2,660,222	2,812,658	3,053,475	3,414,689	3,711,039	3,918,686	4,030,605	[2]4,582,173
Value at wells	113,571	120,243	120,493	138,508	154,236	176,893	189,809	191,006	212,251	274,709
Average value at wells	4.9	4.9	4.5	4.9	5.1	5.2	5.1	4.9	5.3	6.0
Underground storage: Net stored	14,981	8,032	14,995	16,251	21,024	18,953	9,917	25,335	19,320	9,673
Total stored	.....	.....	.....	.....	.....	.....	.....	.....	75,435	96,316
Total withdrawn	.....	.....	.....	.....	.....	.....	.....	.....	56,188	86,643
Interstate shipments[3]	636,626	689,795	738,844	815,672	916,969	990,457	1,029,758	1,105,760	1,145,901	1,402,157
Imports	372	131	.....	.....	.....	.....	.....	.....	.....	.....
Exports	1,837	3,122	5,563	7,466	8,702	11,210	14,576	18,207	17,675	18,149
Treated at natural gasoline plants	2,035,562	2,150,000	2,471,400	2,763,300	2,864,400	3,028,000	3,300,000	3,653,870	3,663,760	4,070,150
Consumption										
Residential: Volume Consumed	367,772	391,153	443,646	442,067	498,537	529,444	562,183	607,400	660,820	802,150
Number of consumers	8,633,970	8,887,460	9,245,230	9,730,110	10,134,770	10,353,870	10,668,400	10,959,060	11,471,640	12,203,700
Value at point of consumption	273,070	287,600	315,515	318,093	352,520	370,558	388,359	415,122	447,018	526,355
Average value at point of consumption	74.2	73.5	71.1	72.0	70.7	70.0	69.1	68.3	67.6	65.6
Commercial: Volume consumed	114,296	118,334	134,644	144,844	183,603	204,793	220,747	230,099	241,802	285,213
Number of consumers	704,240	715,390	741,020	766,910	778,830	811,090	845,220	888,660	964,990	1,039,080
Value at point of consumption	56,247	58,494	64,399	68,398	80,189	87,648	92,137	97,572	102,566	125,844
Average value at point of consumption	49.2	49.4	47.8	47.2	43.7	42.8	41.7	42.4	42.4	44.1
Industrial: Volume consumed, Total	1,812,029	1,964,278	2,076,369	2,218,281	2,362,633	2,669,242	2,913,533	3,062,980	3,110,308	3,339,181
Field	659,203	680,884	711,861	686,158	721,063	780,986	855,180	916,952	897,809	933,761
Carbon Black	324,950	347,270	368,802	365,377	335,533	315,562	355,770	431,830	478,349	484,882
Other industrial[4]	827,876	936,124	995,706	1,166,746	1,306,037	1,572,694	1,702,583	1,714,198	1,734,150	1,920,538
Petroleum refineries	109,741	97,685	128,007	148,127	201,670	243,584	315,311	338,458	331,520	363,892
Portland cement plants	37,496	40,212	41,949	54,208	64,540	51,748	35,588	38,349	58,004	60,499
Electric utility plants	169,988	191,131	183,156	205,156	238,736	305,576	359,745	326,190	306,924	373,037
Value at point of consumption, Total Industrial	171,233	187,627	197,090	233,547	258,458	300,731	313,775	321,501	332,772	376,119
Field	29,628	28,610	27,158	29,993	30,587	33,288	36,868	40,090	41,317	49,835
Carbon Black	2,892	3,263	3,702	4,135	4,338	4,624	5,763	9,854	14,470	17,316
Other industrial	138,713	155,754	166,230	199,419	223,533	262,819	271,144	271,557	276,985	308,968
Avge. value at point of consumption, Total Ind.	9.4	9.6	9.5	10.5	10.9	11.3	10.8	10.5	10.7	11.3
Field	4.5	4.2	3.8	4.4	4.2	4.3	4.3	4.4	4.6	5.3
Carbon Black	0.9	0.9	1.0	1.1	1.3	1.5	1.6	2.3	3.0	3.6
Other industrial	16.8	16.6	16.7	17.1	17.1	16.7	15.9	15.8	16.0	16.1
Total Consumption: Volume consumed	2,294,097	2,473,765	2,654,659	2,805,192	3,044,773	3,403,470	3,696,463	3,900,479	4,012,930	4,426,544
Value at point of consumption	500,550	533,721	577,004	620,038	691,167	758,937	794,271	834,195	882,356	1,028,318
Average value at point of consumption	21.8	21.6	21.7	22.1	22.7	22.3	21.5	21.4	22.0	23.2

U. S. Production and Consumption of Natural Gas, by Years, Part 2, 1948 to Now

CLASSIFICATION[1]	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957[5]
Production										
Wells: Gas wells drilled (Incl. Condensate wells)	2,897	2,887	2,843	3,030	3,255	3,806	3,977	[6]4,169	[6]4,495	[6]4,675
Producing gas wells, Dec. 31 (Incl. Condensate wells)	63,212	63,346	64,900	65,100	65,450	68,200	70,200	[6]73,802	[6]76,308	[6]78,869
Production: Gross Production	7,178,777	7,564,825	8,479,650	9,689,372	10,272,566	10,645,798	10,984,850	11,719,794	12,372,905	12,988,000
Source: (1). From gas wells	4,588,547	4,986,126	5,603,200	6,481,452	6,839,177	7,095,237	7,466,007	7,841,958	8,306,550	8,754,000
(2). From oil wells	2,590,230	2,560,699	2,876,450	3,207,920	3,433,389	3,550,561	3,518,843	3,877,836	4,066,355	4,234,000
Disposition: (1). Repressuring	1,220,579	1,273,205	1,396,546	1,438,827	1,410,501	1,438,606	1,518,737	1,540,804	1,426,648	1,400,000
(2). Vented and wasted	1,810,178	853,884	801,044	793,186	848,608	810,276	723,567	773,639	864,334	900,000
(3). Marketed production	[5]5,148,020	[5]5,419,736	[6]6,282,060	[7]7,457,359	[8]8,013,457	[8]8,396,916	[8]8,742,546	9,405,351	10,081,923	10,688,000
Value at wells	333,173	344,034	408,521	542,964	623,649	774,966	883,000	978,156	1,088,848	1,197,056
Average value at wells	6.5	6.3	6.5	7.3	7.8	9.2	10.1	10.4	10.8	11.2
Underground Storage: Net stored	57,371	65,683	54,492	138,282	176,684	158,036	102,106	68,000	136,000	90,000
Total stored	136,406	172,051	229,752	347,690	398,593	404,838	432,283	505,000	589,000	406,800
Total withdrawn	79,035	106,368	175,260	209,428	221,909	246,802	330,177	437,000	453,000	316,800
Interstate Shipments[3]	1,756,629	2,007,878	2,543,538	3,242,777	3,794,542	4,200,793	[4]4,661,898	[5]5,083,905	[5]5,602,815	[6]6,050,000
Imports	.....	.....	.....	.....	7,807	9,225	6,847	10,888	10,380	10,000
Exports	18,704	20,054	25,727	24,163	27,456	28,322	28,726	31,029	35,963	36,000
Treated at natural gasoline plants	4,393,500	4,656,142	5,346,804	6,203,070	6,418,597	6,837,282	7,458,485	.....	.....	.....
Consumption										
Residential: Volume consumed	896,348	992,544	1,198,369	1,474,725	1,621,966	1,685,503	1,894,248	2,123,952	2,327,564	2,768,000
Number of consumers	13,508,010	14,689,750	16,905,680	21,443,950	22,569,270	24,186,000	25,227,000	26,084,000	27,887,000	28,746,000
Value at point of consumption	585,188	665,536	826,393	1,120,819	1,347,171	1,457,963	1,692,447	1,883,945	2,106,445	2,546,560
Average value at point of consumption	65.6	67.1	69.0	76.0	83.1	86.5	89.3	88.7	90.5	92.0
Commercial: Volume consumed	323,054	347,818	387,838	464,309	515,669	530,650	584,957	629,219	716,871	720,000
Number of consumers	1,145,060	1,231,055	1,347,203	1,613,708	1,854,931	2,042,000	2,076,000	2,140,000	2,255,000	2,317,000
Value at point of consumption	142,170	158,105	184,430	245,609	294,187	323,475	378,242	394,520	465,249	478,800
Average value at point of consumption	44.0	45.5	47.6	52.9	57.0	61.0	64.7	62.7	64.9	66.5
Industrial: Volume consumed, Total	3,725,747	3,855,122	4,440,197	5,163,528	5,475,843	5,763,185	5,923,647	6,317,172	6,662,443	7,200,000
Field	1,021,513	1,059,628	1,187,473	1,441,870	1,483,754	1,471,085	1,456,883	1,507,671	1,420,550	1,579,000
Carbon Black	480,646	427,892	410,852	426,423	368,399	300,942	251,176	244,794	242,598	228,000
Other industrial[4]	2,223,588	2,367,602	2,841,872	3,295,235	3,623,690	3,991,158	4,215,588	4,564,707	4,999,295	5,393,000
Petroleum refineries	441,470	422,357	455,096	537,774	536,402	558,695	563,315	625,243	679,343	685,000
Portland cement plants	72,139	84,521	96,986	102,508	111,479	115,039	125,257	125,000	.....	.....
Electric utility plants	478,097	550,121	628,919	763,898	910,117	1,034,272	1,165,498	1,153,280	.....	.....
Value at point of consumption, Total Industrial	466,201	496,948	593,218	752,247	885,961	1,047,558	1,134,666	1,345,558	1,432,660	1,563,531
Field	61,123	65,210	73,301	97,429	115,371	124,338	120,668	152,274	149,158	170,532
Carbon Black	22,723	20,355	19,677	22,213	20,108	17,668	17,510	19,338	18,680	17,784
Other industrial	382,355	411,383	500,240	632,564	750,482	905,562	996,488	1,173,129	1,264,822	1,375,215
Avge. value at point of consumption, Total Ind.	12.5	12.9	13.4	14.6	16.2	18.2	19.2	21.3	21.5	21.7
Field	6.0	6.2	6.2	6.8	7.6	8.5	8.3	10.1	10.5	10.8
Carbon Black	4.7	4.8	4.8	5.2	5.5	5.9	6.9	7.9	7.7	7.8
Other industrial	17.2	17.4	17.6	19.2	20.7	22.7	23.7	25.7	25.3	25.5
Total Consumption: Volume consumed	4,945,149	5,195,484	6,026,404	7,102,562	7,613,478	7,979,338	8,402,852	9,070,343	9,706,878	10,688,000
Value at point of consumption	1,193,559	1,320,589	1,604,041	2,118,675	2,527,319	2,828,996	3,205,355	3,628,137	4,004,354	4,588,891
Avge. value at point of consumption	24.1	25.4	26.6	29.8	33.2	35.5	38.1	40.0	41.3	42.9

[1] Units—Volume: million cubic feet. No. of consumers: actual. Value: thousand dollars. Average Value: cents per Mcf.
[2] Includes gas stored and lost in transmission.
[3] Includes exports.
[4] Petroleum refineries, portland cement plants, and electric utility plants included in "Other Industrial."
[5] Estimated with aid of reports of Bureau of Mines and American Gas Association.
[6] WORLD OIL statistics.
[7] Quantity received.

Visco

COMPLETE SERVICE FROM WELL THROUGH REFINERY

1 **WELLS**
Control of corrosion, scale, wax.

2 **FLOW LINES**
Control of corrosion, scale, wax.

3 **HEATERS**
Control of corrosion, scale.

4 **TREATING SYSTEMS**
Emulsion breaking. Control of corrosion, wax.

5 **SHIPPING TANKS**
Control of corrosion, scale, wax.

6 **REFINERY**
Desalting, demulsification.

Wherever you go in the oil industry you see the familiar blue Visco drums.

The reasons are simple—Visco gets consistently good results at lowest possible dosage, lowest cost per barrel of oil.

If your operation is plagued with any or all of the problems above, check with your Visco Representative. He will be happy to help you every step of the way.

VISCO PRODUCTS COMPANY
INCORPORATED
1020 Holcombe Blvd., Houston 25, Texas
JAckson 8-2495
Plants at Sugar Land, Texas, and Anaheim, California

Visco® **CONSISTENTLY EFFICIENT OIL INDUSTRY CHEMICALS**

United States Marketed Production of Natural Gas, By States, By Years

(Millions of Cubic Feet)

Sources: U. S. Bureau of Mines, except for some figures for early years which are from "Petroleum in the United States and Possessions" by Ralph Arnold and William Kemnitzer, and except where otherwise indicated by footnotes.

YEAR	Alabama	Arizona	Arkansas	California	Colorado	Florida	Illinois	Indiana	Kansas	Kentucky	Louisiana	Maryland	Michigan	Mississippi	Missouri	Montana	Nebraska	New Mexico	New York
*Pre-1906	.....	.....	281	9,810	631	.....	1,505	471,800	81,865	13,243	31	.....	.....	.....	*613	.....	.....	.....	31,340
1906	.....	.....	21	153	23	.....	410	7,861	69,323	789	39	.....	.....	.....	34	.....	.....	.....	2,548
1907	.....	.....	*570	230	57	.....	1,155	6,624	76,707	1,303	88	.....	.....	.....	108	.....	.....	.....	3,288
1908	.....	.....	*1,208	479	50	.....	4,979	5,256	80,740	1,430	252	.....	.....	.....	152	.....	.....	.....	3,843
1909	.....	.....	*1,778	2,324	*45	.....	8,473	6,159	75,074	2,097	1,365	.....	1	.....	49	.....	.....	.....	4,696
1910	.....	.....	*2,412	2,764	*40	.....	6,723	5,760	59,380	1,357	4,110	.....	1	.....	47	.....	.....	.....	6,010
1911	.....	.....	*1,994	6,390	*35	.....	6,762	4,365	38,800	1,275	9,786	.....	2	.....	50	.....	.....	.....	5,240
1912	.....	.....	*1,465	9,355	*30	.....	5,603	3,618	28,068	1,951	14,493	.....	2	.....	53	.....	.....	.....	8,626
1913	.....	.....	*806	11,035	*27	.....	4,767	2,921	22,884	1,821	26,653	.....	2	.....	21	.....	.....	.....	8,515
1914	.....	.....	*633	17,829	*24	.....	3,548	2,580	22,628	1,422	26,775	.....	2	.....	18	.....	.....	.....	8,935
1915	.....	.....	992	21,891	*21	.....	2,690	2,261	27,046	1,667	25,540	.....	2	.....	27	6	.....	.....	7,977
1916	.....	.....	2,388	31,643	*18	.....	3,534	1,715	31,710	2,107	32,081	.....	1	.....	69	213	.....	.....	8,036
1917	.....	.....	5,610	49,427	*14	.....	4,439	1,712	24,439	2,802	31,287	.....	1	.....	31	334	.....	.....	8,372
1918	.....	.....	5,295	39,719	10	.....	4,473	1,667	27,825	3,022	26,094	.....	1	.....	22	177	.....	.....	8,461
1919	.....	.....	5,587	55,607	10	.....	3,825	1,407	16,150	2,057	47,062	.....	1	.....	5	858	.....	.....	8,124
1920	.....	.....	9,027	66,041	9	.....	3,013	1,779	21,158	3,345	58,274	.....	1	.....	4	818	.....	.....	8,419
1921	.....	.....	4,260	75,942	4	.....	2,646	1,066	15,717	4,820	58,004	.....	1	.....	4	336	.....	.....	6,583
1922	.....	.....	9,700	84,580	4	.....	3,383	947	20,289	5,872	70,267	.....	1	.....	3	486	.....	.....	6,947
1923	.....	.....	24,215	131,434	1	.....	4,049	880	30,913	11,953	112,031	.....	1	.....	17	1,470	.....	.....	6,497
1924	.....	.....	36,616	189,692	48	.....	4,072	998	25,580	12,875	160,945	.....	1	.....	71	1,071	.....	.....	6,196
1925	.....	.....	41,878	187,789	574	.....	4,165	1,168	26,917	10,770	152,620	.....	1	.....	34	1,496	.....	.....	6,210
1926	.....	.....	43,566	204,915	554	.....	3,808	901	38,095	10,410	157,423	.....	1	.....	1	2,283	.....	921	7,027
1927	.....	.....	30,450	212,364	1,725	.....	3,741	1,124	42,646	10,206	186,961	.....	1	.....	1	4,253	.....	1,019	5,908
1928	.....	.....	20,235	246,215	2,931	.....	3,051	1,290	45,644	15,383	227,821	.....	469	.....	360	6,277	.....	838	7,224
1929	.....	.....	19,928	342,214	2,787	.....	2,983	1,012	38,469	27,588	261,138	.....	4,526	90	324	9,659	.....	3,054	8,387
1930	.....	.....	18,585	334,789	3,312	.....	2,890	1,217	37,630	28,023	278,341	.....	2,075	179	1,064	10,060	.....	9,497	9,624
1931	.....	.....	13,300	305,930	2,536	.....	2,130	1,337	38,742	27,870	224,155	.....	472	6,048	1,534	10,949	.....	19,354	7,868
1932	.....	.....	10,235	263,484	2,547	.....	1,769	1,349	40,690	29,005	201,561	.....	968	8,648	932	13,295	.....	17,604	8,813
1933	.....	.....	8,288	259,799	2,449	.....	1,631	1,544	41,596	31,380	197,826	.....	1,528	8,679	673	14,391	.....	19,148	6,865
1934	.....	.....	7,024	268,122	2,633	.....	1,868	1,802	46,909	33,124	225,713	.....	2,789	8,245	549	14,971	.....	24,075	6,278
1935	.....	.....	6,157	284,109	2,843	.....	1,448	1,777	57,125	39,738	249,450	.....	4,203	9,643	609	19,870	.....	27,931	8,288
1936	.....	.....	8,500	320,406	3,687	.....	865	2,241	69,178	43,903	290,151	.....	7,167	11,821	399	23,003	.....	33,928	12,431
1937	.....	.....	9,690	329,769	3,186	.....	1,040	1,551	83,890	55,719	315,301	.....	9,080	13,348	444	24,765	.....	46,337	21,325
1938	.....	.....	11,301	315,168	1,904	.....	1,169	1,299	75,203	46,163	283,899	.....	10,165	13,656	1,369	21,216	.....	50,706	39,402
1939	.....	.....	10,107	348,361	2,015	.....	2,746	791	80,556	47,771	294,370	.....	10,726	14,527	538	23,178	.....	60,284	29,222
1940	.....	.....	14,379	351,950	2,533	.....	8,359	1,137	90,003	53,056	343,191	.....	12,648	6,365	310	26,231	.....	63,990	12,187
1941	.....	.....	19,148	374,905	3,256	.....	10,053	1,522	111,121	69,067	403,855	.....	13,916	4,268	196	28,499	.....	64,655	10,456
1942	.....	.....	19,456	403,968	4,865	.....	14,484	1,599	112,921	80,089	447,686	.....	15,521	2,082	100	31,475	.....	78,164	8,718
1943	.....	.....	36,469	457,757	6,445	.....	18,120	1,450	133,729	92,364	505,294	.....	18,006	1,461	124	31,562	.....	86,500	8,062
1944	.....	.....	46,453	502,017	5,141	6	18,137	1,014	157,733	94,223	534,688	.....	19,653	1,352	159	32,102	.....	87,727	7,052
1945	.....	.....	46,600	502,442	4,914	6	16,663	1,543	145,959	81,714	542,789	.....	21,874	4,587	90	31,829	.....	105,023	9,210
1946	.....	.....	45,177	487,904	6,728	6	17,166	1,094	165,225	70,396	525,178	.....	20,879	7,225	40	30,713	.....	119,262	5,084
†1947.5	.....	.....	*50,440*	*544,950*	*8,259*	.....	*16,679*	*666*	*202,177*	*80,040*	*573,151*	.....	*25,479*	*39,987*	*33*	*32,549*	.....	*142,566*	*4,776*
‡1947	.....	.....	50,630	560,510	8,392	8	17,023	877	209,321	96,459	581,398	.....	18,821	40,037	38	34,282	.....	142,740	4,600
1948	.....	.....	53,946	570,954	8,967	27	14,062	553	245,189	70,095	686,061	.....	14,981	59,899	27	36,551	.....	194,749	4,705
1949	.....	.....	47,788	550,903	8,490	39	12,391	334	294,078	51,851	732,845	.....	14,753	68,062	24	35,291	.....	204,961	3,693
1950	2	.....	48,047	558,398	11,168	.....	13,285	956	364,024	73,316	831,771	373	11,250	114,153	21	39,186	17	212,909	3,336
1951	1	.....	44,656	566,751	14,128	10	11,425	845	417,538	76,097	1,054,199	3,422	11,194	158,845	14	36,424	3,895	300,169	3,214
1952	4	.....	42,325	517,450	34,260	15	10,183	836	412,544	73,427	1,237,143	2,372	9,052	174,100	16	28,714	5,568	359,377	3,627
1953	41	.....	41,510	531,346	28,509	34	9,282	701	420,607	71,405	1,293,644	1,408	7,774	154,254	15	27,889	6,748	399,086	2,347
1954	87	.....	33,471	507,289	45,705	35	9,475	735	412,369	72,713	1,399,222	1,394	6,962	140,448	16	30,252	6,801	449,346	2,598
1955	282	15	32,123	538,178	49,152	36	8,033	1,226	471,041	73,214	1,680,032	3,116	8,300	163,167	15	28,255	12,515	540,664	3,637
1956	42	21	30,162	504,458	54,205	35	6,177	791	526,091	73,687	1,886,302	4,619	10,911	185,137	12	25,847	13,541	626,340	4,098
1957	100	100	33,900	494,000	89,300	100	6,200	600	613,100	71,500	2,001,600	5,000	8,100	183,800	100	32,000	8,900	755,800	1,500
Total	559	136	1,060,352	14,010,959	422,942	357	335,871	569,592	6,862,679	1,878,934	20,948,805	21,704	298,778	1,564,126	11,546	772,537	57,985	5,106,158	441,649

* Estimate. † Old basis as in prior years; excludes gas stored and lost in transmission; not included below in totals. ‡ New basis, as in subsequent years; includes gas stored and lost in transmission; included below in totals.

																				Value at Wells	Cost to Users
1947.5	.....	.....	*50,440*	*544,950*	*8,259*	.....	*16,679*	*666*	*202,177*	*80,040*	*573,151*	.....	*25,479*	*39,987*	*33*	*32,549*	.....	*142,566*	*4,776*	*1,000,000*	*2,000,000*
1947	.....	.....	50,630	560,510	8,392	8	17,023	877	209,321	96,459	581,398	.....	18,821	40,037	38	34,282	.....	142,740	4,600	1,000,000	2,000,000

YEAR	North Dakota	Ohio	Oklahoma	Pennsylvania	South Dakota	Tennessee	Texas	Utah	Virginia	Washington	West Virginia	Wyoming	Others	Total United States	Value at Wells $1,000	Value at Wells ¢ Mcf.	Cost to Users $1,000	Cost to Users ¢ Mcf.
*Pre-1906	.....	305,593	2,215	1,611,066	.....	*1	815	*150	.....	.....	387,799	506	42,517	**2,961,781**	.....	.....	426,448	14.4
1906	.....	45,436	3,520	138,161	23	2	*1,000	.....	.....	.....	119,400	*100	.....	**388,843**	.....	.....	46,874	12.1
1907	2	52,041	4,867	135,516	37	2	*1,200	.....	.....	.....	122,687	*140	.....	**406,622**	.....	.....	54,222	13.3
1908	10	47,442	11,925	130,476	36	2	*1,500	.....	.....	.....	112,181	*180	.....	**402,141**	.....	.....	54,640	13.6
1909	8	53,223	28,037	127,697	23	2	*3,000	.....	.....	.....	166,435	*220	.....	**480,706**	.....	.....	63,207	13.1
1910	19	48,232	50,430	126,867	43	1	*4,000	.....	.....	.....	190,706	*253	.....	**509,155**	.....	.....	70,756	13.9
1911	13	49,450	67,276	108,869	26	1	5,503	.....	.....	.....	206,891	*265	.....	**512,993**	.....	.....	74,622	14.5
1912	*18	56,210	73,799	112,150	*36	2	7,470	.....	.....	.....	239,007	*247	.....	**562,203**	.....	.....	84,564	15.0
1913	*22	50,612	75,018	118,860	*45	2	12,160	.....	.....	.....	245,454	*273	.....	**581,898**	.....	.....	87,847	15.1
1914	*20	68,270	78,167	110,745	*41	1	13,434	.....	.....	.....	236,489	*306	.....	**591,867**	.....	.....	94,116	15.9
1915	*36	79,510	87,517	113,692	*53	2	13,324	.....	.....	.....	244,004	*321	.....	**628,579**	.....	.....	101,312	16.1
1916	*35	69,888	123,517	130,484	*43	2	15,810	.....	.....	.....	299,319	*557	.....	**753,170**	.....	.....	120,227	16.0
1917	*27	68,917	137,384	133,397	*33	11	17,047	.....	.....	.....	308,617	*1,209	.....	**795,110**	.....	.....	142,089	17.9
1918	35	61,261	124,317	123,813	42	1,827	13,440	.....	.....	.....	265,161	4,339	.....	**721,001**	.....	.....	153,554	21.3
1919	2	63,154	163,649	113,489	33	77	24,710	.....	.....	.....	234,095	6,014	.....	**745,916**	.....	.....	160,888	21.6
1920	1	58,938	154,467	125,787	20	15	37,063	.....	.....	.....	239,719	10,312	.....	**798,210**	.....	.....	196,194	24.6
1921	1	47,412	124,058	86,144	10	11	44,504	.....	.....	.....	174,921	15,608	.....	**662,052**	.....	.....	174,617	26.4
1922	1	51,481	140,631	101,276	15	3	47,945	.....	.....	.....	195,288	23,427	.....	**762,546**	84,873	11.1	221,535	29.1
1923	.....	53,812	203,082	112,562	33	4	74,535	.....	.....	.....	203,867	35,523	97	**1,006,976**	100,849	10.0	240,001	23.8
1924	.....	47,396	214,452	105,863	3	1	107,247	.....	.....	.....	182,285	46,036	73	**1,141,521**	105,779	9.3	253,856	22.2
1925	.....	43,235	249,285	101,632	4	9	134,872	.....	.....	.....	180,345	45,539	28	**1,188,571**	112,047	9.4	265,271	22.3
1926	.....	47,363	286,421	107,089	10	11	175,392	.....	.....	.....	180,223	46,567	38	**1,313,019**	124,693	9.5	300,168	22.9
1927	.....	51,381	326,864	105,709	92	9	254,063	927	.....	.....	162,375	43,582	27	**1,445,428**	127,468	8.8	317,930	22.0
1928	.....	56,341	320,861	99,466	54	.....	301,990	1,105	.....	.....	163,018	47,490	76	**1,568,139**	139,898	8.9	363,726	23.2
1929	.....	57,936	357,893	101,951	99	25	464,928	693	.....	.....	167,333	44,648	28	**1,917,693**	157,596	8.2	413,276	21.6
1930	.....	63,394	348,116	88,706	98	24	517,880	393	.....	.....	144,180	43,219	125	**1,943,421**	147,048	7.6	416,090	21.4
1931	.....	56,326	263,685	74,797	12	25	464,580	219	.....	.....	124,797	39,770	.....	**1,686,436**	117,505	7.0	392,816	23.3
1932	.....	51,466	255,487	61,611	10	22	456,832	184	.....	.....	100,540	28,938	.....	**1,555,990**	98,985	6.4	384,632	24.7
1933	.....	47,929	245,759	63,579	10	48	475,691	48	.....	111	100,653	25,830	‡ 19	**1,555,474**	97,096	6.2	368,540	23.7
1934	.....	50,330	254,457	86,238	11	12	602,976	182	.....	104	109,161	23,148	.....	**1,770,721**	106,438	6.0	395,378	22.3
1935	.....	49,592	274,313	94,464	8	.....	642,366	98	.....	138	115,772	26,643	.....	**1,916,595**	110,402	5.8	329,374	22.4
1936	.....	46,994	280,481	110,362	9	84	734,561	92	.....	141	138,076	29,322	.....	**2,167,802**	119,193	5.5	476,813	22.0
1937	.....	42,783	296,260	115,928	10	17	854,561	2,366	.....	143	149,084	31,023	.....	**2,407,620**	123,457	5.1	528,354	21.9
1938	71	35,257	263,164	76,547	10	6	882,473	4,277	.....	117	134,342	26,678	.....	**2,295,562**	113,571	4.9	500,698	21.8
1939	76	36,469	250,875	93,882	10	8	979,427	4,854	60	63	159,226	26,614	.....	**2,476,756**	120,243	4.9	534,240	21.6
1940	.....	40,639	257,626	90,725	9	9	1,063,538	5,124	80	36	188,751	27,346	.....	**2,660,222**	120,493	4.5	577,939	21.7
1941	47	41,858	234,054	92,819	7	10	1,086,312	5,562	106	1	207,681	29,284	.....	**2,812,658**	138,508	4.9	621,333	22.1
1942	122	45,055	269,704	93,532	7	10	1,170,345	5,163	92	.....	215,193	33,124	.....	**3,053,475**	154,236	5.1	692,737	22.7
1943	177	52,001	285,045	93,543	6	10	1,323,885	4,464	77	.....	223,787	34,351	.....	**3,414,689**	176,893	5.2	760,950	22.3
1944	200	51,724	310,888	92,987	5	10	1,525,515	6,223	57	.....	181,452	34,521	.....	**3,711,039**	189,809	5.1	794,271	21.5
1945	217	49,967	357,530	82,188	5	10	1,711,401	6,562	56	.....	160,225	35,282	.....	**3,918,686**	191,006	4.9	834,195	21.4
1946	344	61,570	380,938	92,443	5	47	1,776,148	4,252	57	.....	178,958	33,266	.....	**4,030,605**	212,251	5.3	882,356	22.0
†*1947*	.....	*73,989*	*393,216*	*94,252*	.....	*80*	*1,932,857*	.....	.....	.....	*182,072*	*40,083*	*6,392*	*4,444,693*	*266,682*	*6.0*	*1,031,169*	*23.2*
‡1947	442	68,946	419,010	91,971	6	80	1,992,704	6,040	64	.....	192,233	45,550	.....	**4,582,173**	274,709	6.0	1,028,318	23.2
1948	643	65,619	480,573	87,578	2	127	2,289,923	6,610	74	.....	203,681	52,424	.....	**5,148,020**	333,173	6.5	1,193,559	24.1
1949	533	46,512	435,262	84,739	1	83	2,588,921	6,126	65	.....	181,176	50,815	.....	**5,419,736**	341,443	6.3	1,320,589	25.4
1950	.....	43,163	482,360	91,137	.....	132	3,126,402	.....	.....	.....	189,980	62,062	4,612	**6,282,060**	408,776	6.5	1,604,041	26.5
1951	*463	38,879	538,756	128,715	•	132	3,781,136	ɪ	64	.....	191,146	ɪ75,241	.....	**7,457,359**	542,964	7.3	2,118,675	29.8
1952	369	30,993	554,033	108,684	6	107	4,147,805	3,006	1,133	.....	180,995	75,313	.....	**8,013,457**	623,649	7.8	2,527,319	33.2
1953	*503	37,542	599,955	105,558	•	89	4,383,158	7,075	3,697	.....	186,477	76,262	.....	**8,396,916**	775,000	9.2	2,834,215	35.5
1954	*1,100	28,824	616,355	145,934	•	89	4,551,232	16,024	1,401	.....	191,601	71,068	.....	**8,742,546**	883,000	10.1	3,204,696	38.0
1955	*5,256	33,756	614,976	99,172	.....	39	4,730,798	17,163	968	.....	212,403	77,819	.....	**9,405,351**	1,015,778	10.8	3,628,137	40.0
1956	11,725	25,368	678,603	104,508	.....	45	4,999,889	17,268	2,926	.....	204,717	84,398	.....	**10,081,923**	1,088,848	10.8	4,044,970	41.5
1957	13,000	25,800	652,400	104,200	12,000	100	5,249,900	26,000	2,700	.....	203,900	92,300	.....	**10,688,000**	1,197,056	11.2	4,400,025	42.5
Total	35,538	2,903,290	14,310,317	7,039,308	13,101	3,398	59,887,311	158,250	13,677	854	9,997,806	1,665,273	47,640	**150,441,432**	§	§	41,877,590	§

* Estimate. † Old basis, as in prior years; excludes gas stored and lost in transmission; not included below in totals. ‡ New basis, as in subsequent years; includes gas stored and lost in transmission; included below in totals. § Not available. ɪ Wyoming includes Utah. • North Dakota includes South Dakota. ‡ Others in 1933: Alaska.

better design + hard facing...

"INSTALL OILMASTER ROD GUIDES AND

Another decrease in artificial lift is forecast

WORLD OIL estimates that 24,569 U. S. wells will be placed on artificial lift in 1958. And expenditures to maintain existing artificially lifted wells are expected to total $80,920,000.

Although still at a high post war level, the total number of wells going on artificial lift for the first time will be lower (1339 wells) than last year. This is due to prospects that 1957's decline in drilling activity will continue through most of 1958.

Last year's sharp decrease in new producing wells resulted in a total of 25,907 wells being placed on artificial lift—2722 less than the record high of 28,629 in 1956. Even so, at the end of 1957 there were 495,489 wells on artificial lift in the U. S., nearly 8000 more than at the end of 1956. Rising equipment and labor costs will keep this year's maintenance expenditure near the record total of $82,412,000 that was forecast for 1957.

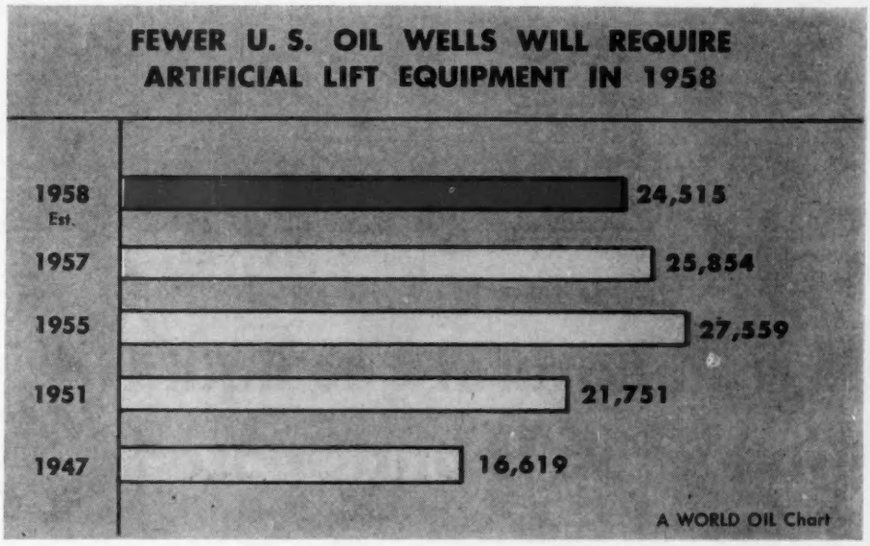
Forecast by states. As the nation's top oil producing state, Texas once again will have the largest number of wells to be placed on artificial lift. WORLD OIL estimates the total will be 11,501 wells, 899 less than in 1957. This will be the lowest total since 1954 when 9236 wells went on artificial lift for the first time.

Texas will also lead in lifting equipment maintenance expenditure with an estimated $26,921,000 during 1958.

Oklahoma will have the second largest number of wells to go on artificial lift with 3369. Equipment expenditures for existing artificial lift wells is estimated at $10,359,000.

Last year, Oklahoma reported the biggest drop in artificial wells of any state during the post war era—1366 less wells than the record high of 4979 that were put on artificial lift in 1956.

Kansas is third with an estimated 1735 wells to go on artificial lift. Maintenance expenditures in Kansas are expected to total $5,271,000.

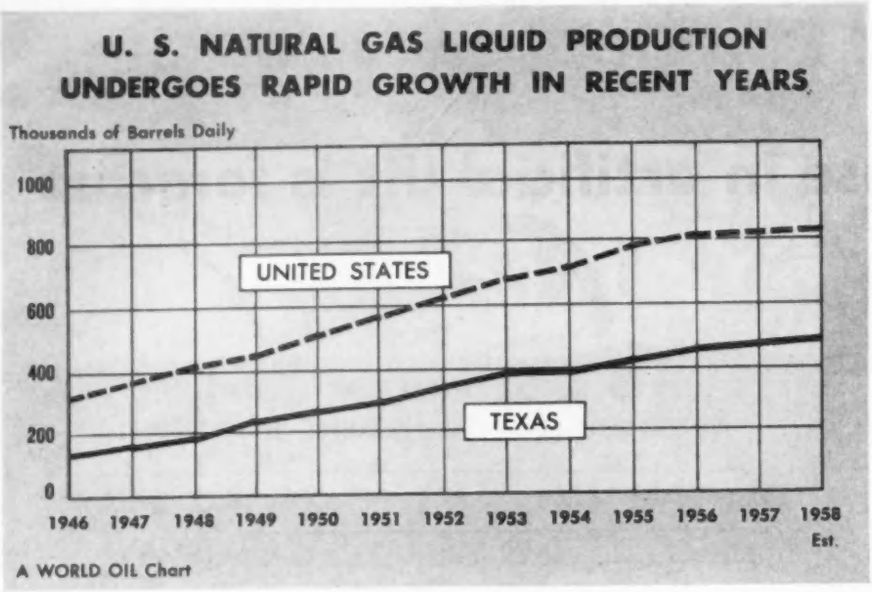


Estimates of 1958 Artificial Lifting Equipment Requirements

(Includes requirements for all types of pumping, hydraulic power, and gas lift units)

STATE or DISTRICT	Est. Wells to go on Art. Lift in 1958	Wells Put on Pump or Lift in 1957	New Oil Wells Completed in 1957	Flowing Oil Wells End of 1957	Oil Wells on Artificial Lift End of 1957	Net Wells Shut in or Abandoned in 1957	Est. Maintenance Cost for All Art. Lift Wells in 1958 (Equipment Only)
Alabama	57	80	53	35	181	—4*	$ 23,000
Arkansas	776	840	704	246	5,173	86	745,000
California	1,588	1,689	1,586	1,496	35,756	558	16,228,000
Colorado	11	7	146	572	1,612	119	273,000
Illinois	800	863	1,047	213	37,828	724	4,511,000
Indiana	—41†	—40†	241	300	4,816	304	518,000
Kansas	1,735	1,921	1,897	103	38,466	441	5,271,000
Kentucky	667	610	608	19	18,238	53	2,191,000
Louisiana	802	840	1,833	7,991	12,224	352	1,948,000
North Louisiana	538	555	777	1,711	9,610	297	1,393,000
South Louisiana	264	285	1,056	6,280	2,614	56	555,000
Michigan	421	416	175	309	3,870	—1*	604,000
Mississippi	431	219	112	327	2,005	15	475,000
Montana	107	120	193	585	3,261	375	560,000
Nebraska	217	222	290	87	1,616	208	326,000
New Mexico	429	470	1,166	4,259	5,809	85	2,006,000
New York	235	244	244	.....	19,200	714	1,178,000
North Dakota	100	80	165	543	395	—2*	54,000
Ohio	515	522	577	130	14,700	567	1,002,000
Oklahoma	3,369	3,613	3,104	2,264	75,623	1,009	10,359,000
Pennsylvania	320	350	350	.....	69,700	1,730	3,912,000
Texas	11,501	12,400	12,285	48,098	125,861	4,312	26,921,000
Dist. 1: South Central	648	780	682	422	6,907	164	1,222,000
Dist. 2: Middle Gulf	283	254	201	3,304	2,213	119	459,000
Dist. 3: Upper Gulf	800	900	721	4,892	7,839	436	1,392,000
Dist. 4: Lower Gulf-S.W.	552	553	476	5,098	6,874	445	1,344,000
Dist. 5 & 6: E. Cent. & N.E.	674	646	622	12,223	14,637	474	3,654,000
Dist. 7-B & 9: N. Cent. & N.	3,428	3,791	3,763	4,243	41,548	1,799	9,258,000
Dist. 7-C & 8: W. Cent. & W.	4,533	4,898	4,865	17,667	34,896	823	7,693,000
Dist. 10: Panhandle	583	878	955	249	10,947	52	1,899,000
Utah	134	43	149	129	210	—80*	37,000
West Virginia	90	98	98	.....	12,700	168	816,000
Wyoming	305	298	338	513	6,074	183	1,052,000
Other States‡	.....	2	3	2	171	37	24,000
Total United States	24,569	25,907	27,364	68,221	495,489	11,953	$ 81,034,000

* Net wells put back on production.
† Artificial lift wells put back on flow status.
‡ Arizona, Florida, Missouri, Nevada, South Dakota, Tennessee, Virginia, and Washington.



Record natural gas liquids production is anticipated

THANKS TO A continued anticipated increase in LPG sales, natural gas liquids production is likely to reach a record level in 1958. The current year's production is expected to average 824,000 barrels per day in furnishing an annual total of 300,760,000 barrels.

This estimate indicates a percentage increase from the previous year of approximately 2 percent. In 1957, daily average production of natural gas liquids amounted to 809,000 barrels for a yearly figure of 295,285,000 barrels, itself a 1.1 percent rise from the 800,000-barrel-a-day level established for the year of 1956. Total production for the latter year amounted to 292,727,000 barrels.

Some support already has been voiced in behalf of prorating natural gas liquids productions in accordance with market demand, as some states are doing. Reason, of course, for this support is the burgeoning rate of production. For example, since 1948 natural gas liquids production has more than doubled. Output in 1948 amounted to 401,000 barrels per day, or an annual yield of 146,721,000 barrels.

In November of last year, the U. S. Bureau of Mines reported from the Natural Gas Liquids Report that total natural gas liquids production amounted to 24,930,000 barrels, or an average of 831,000 barrels per day. At the same time, shipments from plants and terminals reached 27,201,000 barrels for a daily average of 906,700 barrels.

Stocks at the end of last November totaled 25,575,000 barrels of natural gas liquids, of which:

- 23,650,000 barrels were located at plants and terminals, according to the Natural Gas Liquids Report.
- 553,000 barrels of liquid petroleum gas were in stock at refineries.
- 1,372,000 barrels of natural gas liquids, other than LPG were in storage at refineries. This category includes benzol.

Natural gas liquids production in November stemmed largely from Texas, with inland fields furnishing 10,099,000 barrels, or an average of 336,633 barrels per day, and the Texas Gulf supplying 3,401,000 barrels, for a daily average output of 113,366 barrels.

Daily average production during November, according to U. S. Bureau of Mines' Natural Gas Liquids Report, amounted to:

- 95,100 barrels in the district comprised of Oklahoma, Kansas, Missouri, etc.
- 83,700 barrels in the West Coast district.
- 45,466 barrels in New Mexico.
- 43,933 barrels in the district comprised of Indiana, Illinois, Kentucky, etc.
- 40,800 barrels in the Arkansas, Inland Louisiana, etc., district.
- 38,866 barrels in the Louisiana Gulf producing area.
- 33,133 barrels in the remaining districts, including Minnesota, Wisconsin, North Dakota, and South Dakota; other Rocky Mountain; Appalachian No. 1; and Appalachian No. 2.

Early in 1958, refinery and terminal prices were quoted as follows:

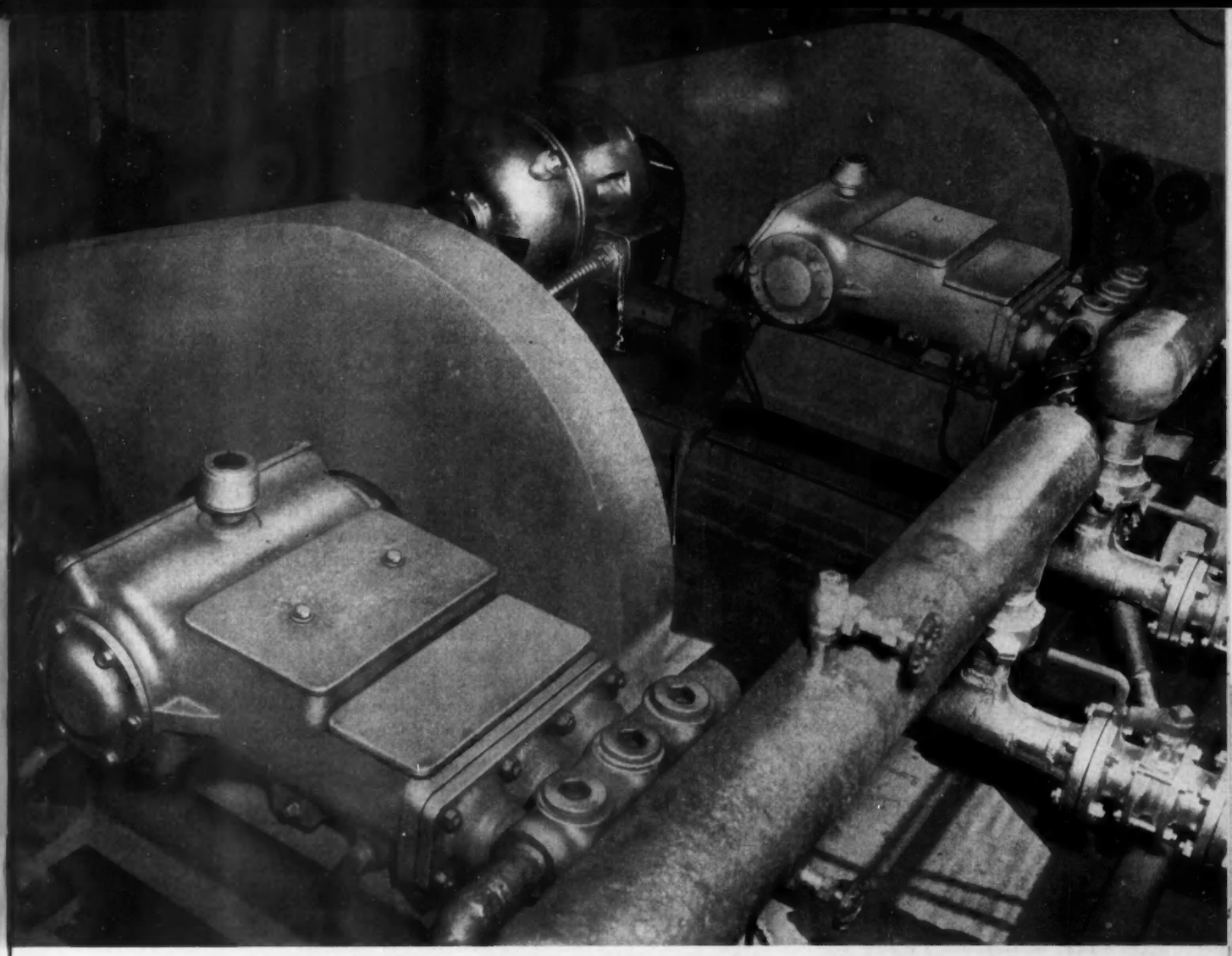
- FOB Group 3, grade 26-70, 4.5.
- FOB Breckenridge, Texas, grade 26-70, 4.

U. S. Production of Natural Gas Liquids

(Source: Bureau of Mines except Nov.-Dec., 1957, estimated. New series beginning 1941 includes cycle condensate.)

(THOUSANDS OF BARRELS)

Year	Total	Daily	Year	Total	Daily	Year	Total	Daily
Natural Gasoline			1932....	36,281	99	1946....	115,739	317
1918.....	6,727	18	1933....	33,810	93	1947....	132,173	362
1919.....	8,370	23	1934....	36,556	100	1948....	146,721	401
1920.....	9,161	25	1935....	39,333	108	1949....	157,086	430
1921.....	10,713	29	1936....	42,770	117	1950....	181,961	499
1922.....	12,044	33	1937....	49,177	135	1951....	204,754	561
1923.....	19,434	53	1938....	51,347	141	1952....	223,515	611
1924.....	22,235	61	1939....	51,650	142	1953....	238,579	654
1925.....	26,845	74	1940....	55,700	152	1954....	252,133	691
1926.....	32,455	89	**Natural Gas Liquids**			1955....	281,371	771
1927.....	39,075	107	1941....	80,855	222	1956....	292,727	800
1928.....	43,191	118	1942....	83,222	228	1957....	295,285	809
1929.....	53,183	146	1943....	87,716	240	1958		
1930.....	52,631	144	1944....	100,046	273	Est....	300,760	824
1931.....	43,617	119	1945....	112,004	307			



Put These Tough Little Power Pumps on Waterflood and Disposal Jobs

You're apt to run into 'most anything on waterflood jobs, and the same is true of salt-water disposal. That's why Bethlehem has gone all out to build the toughest, most durable pumps ever offered for these types of service.

The Bethlehem line includes two triplex models—the TP-3 and the somewhat larger TP-4. These are unusually rugged units with a controlled gravity-flow lubrication system. Oil floods the power end at all speeds, high or low, and the system starts up with the first turn of the gears. Positive, dependable lubrication is one of the reasons why TP's can be operated continuously under full load.

Fluid ends are available in molybdenum alloy iron, cast steel, and aluminum-bronze, and in all cases the proper complementary trim is furnished. Plungers are of hardened steel, stainless steel, or solid ceramic. This range of combinations makes the TP's suitable for many uses—not only in waterflooding and disposal work, but also in crude-oil gathering and the handling of refinery products.

The pumps can be fitted with an optional speed-reducer, which is easily installed in the field. This device is adaptable for either right-hand or left-hand drive, and can of course be used with standard oil-field engines or motors.

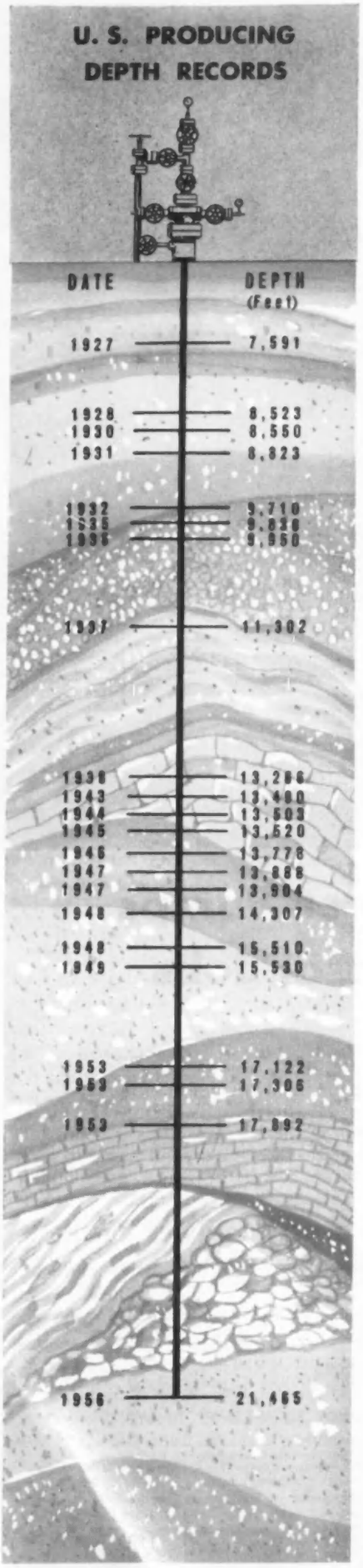
In addition to its TP triplex units, Bethlehem makes duplex models known as the U-series. Thus it is possible to select exactly the proper size and type of pump to meet your needs. When you are next in the market, get complete information from the nearest Bethlehem office.

BETHLEHEM GENERAL-SERVICE PUMPS

Model	Type	Plunger Load, lb	Input hp	Bore & Stroke, In.
TP-3	Triplex	3580	36 @ 400 rpm (max)	1 ¾ to 2 ¼ x 3
TP-4	Triplex	5000	67 @ 400 rpm (max)	2 to 4 x 4
U-33	Duplex	2400	13 @ 160 rpm	1 ¾ to 3 x 3
UA-46	Duplex	5000	40 @ 120 rpm	2 ½ to 4 x 6
U-510	Duplex	12000	100 @ 75 rpm	3 to 5 ½ x 10

BETHLEHEM SUPPLY COMPANY
General Offices: 21 E. Second St., Tulsa, Okla.
West Coast Headquarters: Los Angeles, Calif.
Canadian Distributor: Bethlehem Supply Company of Canada, Ltd
Calgary, Alberta, Canada
Export Distributor: Bethlehem Steel Export Corporation
25 Broadway,
New York, N. Y.

BETHLEHEM SUPPLY



Oklahoma well becomes second deepest producer

THE DEEPEST producing well in the U. S. remained unchanged from 1956, but new second, third and fourth deepest producers were completed during 1957.

The nation's second deepest producing well is now Oklahoma's British American Oil Company's Krieger 1, Knox field, Stephens County, at 16,912 feet.

The new third and fourth deepest wells, respectively, are Hunt Oil's State 758-2, Coon Point field, producing from 16,840 feet in the Gulf of Mexico off the South Louisiana coast, and Wyoming's Pure Oil Bad Water Unit 1, a wildcat producing from 16,472 feet in Natrona County. These two wells replace Shell Oil Company's Gonsoulin Minvielle-State Unit 2 and Weeks-Gall Unit 1, which were both producing from more than 17,000 feet in the Weeks Island field of South Louisiana before they were plugged back.

Still in fifth position is Standard Oil Company of California's Mushrush 5, producing from 15,530 feet in the Wasco field, Kern County, California. This well was the deepest producer in the U. S. when drilled in 1949. It held the record until 1953.

Deepest Well. For the second year, the nation's deepest inshore producing

Holders of Record as Deepest Producing Well in U. S., Since 1927

Year Drilled	WELL AND LOCATION	Production	Bottom of Pay (Feet)
1927	E. J. Miley's Athens 6, Rosecrans field, California	....	7,591
1928	Texon Oil & Land Co.'s University 1-B, Big Lake field, West Texas	Oil	8,523
1930	Star Petroleum Co.'s Colby 2, Long Beach, California	....	8,550
1931	Tide Water Associated Oil Co.'s Lloyd 57, Ventura Avenue field, California	Oil	8,823
1932	Tide Water Associated Oil Co.'s Lloyd 83, Ventura Avenue field, California	Oil	9,710
1935	Tide Water Associated Oil Co.'s Lloyd 131, Ventura Avenue field, California	Oil	9,836
1936	The Texas Co.'s Lafitte 5, Lafitte field, South Louisiana	Oil	9,950
1937	Union Oil Co.'s Kernco 85-34, Rio Bravo field, Kern County, California	Oil	11,302
1938	Fohs Oil Co.'s Buckley-Bourg 1, DeLarge field, South Louisiana	*Cond.	13,266
1943	Union Producing Co.-Fohs Oil Co.'s Fitzpatrick-Vizard 1, DeLarge field, South Louisiana	*Cond.	13,490
1944	Union Producing Co.-Fohs Oil Co.'s Buckley-Bourg 2, DeLarge field, South Louisiana	Oil	13,503
1945	Shell Oil Co.'s Smith-State Unit 1-1, Weeks Island field, South Louisiana	Oil	13,520
1946	Shell Oil Co.'s Smith-State Unit 1-2, Weeks Island field, South Louisiana	Oil	13,778
1947	Shell Oil Co.'s Smith-State Unit 1-3, Weeks Island field, South Louisiana	Oil	13,888
1947	The Texas Co.'s LaFourche Basin Levee Dist. 1, Queen Bess Island field, South Louisiana	*Cond.	13,904
1948	Pure Oil Co.'s Unit 1, West Poison Spider field, Wyoming	Oil	14,307
1948	Denver Producing & Refg. Co.'s School Land 1-A, Cogar field, Caddo County, Okla.	Gas	15,510
1949	Standard Oil Co. of California's Mushrush 5, Wasco field, Kern County, California	Oil	15,530
1953	Shell Oil Co.'s Weeks-Gall Unit 1-1, Weeks Island field, South Louisiana	Oil	17,122
1953	Shell Oil Co.'s Gonsoulin Minvielle-State 2, Weeks Island field, South Louisiana	Oil	17,306
1953	Richfield Oil Corp.'s Cole Levee "A" 67-29, Coles Levee, North field, California	Oil	17,892
1956	Richardson & Bass et al's Humble-LL&E 1-L, Lake Washington field, South Louisiana	Oil	21,465

Producing Depth Records in the U. S.

State or District	Bottom of Pay (Feet)	Year Drilled	Wells and Location	Producing Formation	Production
S. La.-Inshore	**21,465**	1956	Richardson & Bass et al's Humble-LI&E 1-L, Plaquemines Parish (Since plugged back to 20,745 feet)	Miocene	Oil
Oklahoma	**16,912**	1957	British American's Krieger 1, Knox Field, Stephens County	Oil Creek	*Cond.
S. La.-Offshore	**16,840**	1957	Hunt Oil's State 758-2, Coon Point Field, Ship Shoal Area	Miocene	*Cond.
Wyoming	**16,472**	1957	Pure Oil's Badwater Unit 1, Wildcat, Natrona County	U. Cretaceous	Gas
California	**15,530**	1949	Standard of California's Mushrush 5, Wasco Field, Kern County	Eocene	Oil
West Texas	**15,324**	1953	Phillips Petroleum's Odom 1-A, Puckett Field, Pecos County	Ellenburger	*Cond.
N. Mex.-S.E.	**15,025**	1955	Continental's Bell Lake Unit 1-A, Bell Lake Field, Lea County	Devonian	Gas
S. W. Texas	**14,940**	1956	Magnolia's L. M. Morrison 1, Morrison Field, Val Verde County	Ellenburger	Gas
Tex. Gulf Coast	**14,747**	1957	Phillips' O'Daniel 1, Alta Loma Field, Galveston County	Lower Firo	*Cond.
Mississippi	**13,556**	1957	Skelly & Kin-Ark Oil's B. L. Herring 1, Dexter Field, Marion Co.	Mooringsport	Gas
Montana	**12,605**	1953	Sun Oil & Phillips' Dynneson 1, Brorson Field, Richland County	Red River	Oil
East Texas	**12,415**	1956	Tide Water's Irene Alexander 1-D, New Hope Field, Franklin County	Smackover	*Cond.
North Dakota	**11,744**	1957	Amerada's Herfindahl-Kvam Unit 1, Beaver Lodge-Tioga Fld, Williams Co.	Silurian	Oil
Florida	**11,588**	1948	Humble's Lee Tidewater Cypress Lbr. 1-B, Sunniland Field, Collier Co.	L. Cretaceous	Oil
Alabama	**11,504**	1956	Zach Brooks et al's D. R. Coley, Jr. et al 1, Citronelle Field, Moblie Co.	L. Rodessa	Oil
N. Louisiana	**11,310**	1953	A. J. Hodges' Pardee-Callaway et al 1, Ivan Field, Webster Parish	Smackover	*Cond.
N. Tex.-Pan.	**11,290**	1955	Phillips' Troy 1-A, Laketon Field, Gray County	Ellenburger	Oil
Utah	**10,244**	1952	Phillips & Carter's Peterson Unit E-11, Roosevelt Field, Uintah County.	Wasatch	Oil
Arkansas	**9,484**	1957	Phillips et al's Talley B-1, Plainfield Field, Columbia County	Cotton Valley	Oil
Colorado	**9,435**	1950	Delhi Oil's Barker 5, Barker Dome Field, La Plata County	Paradox	Gas
N. Mex.- N. W.	**9,300**	1950	El Paso Natural's Ute 4, Barker Creek Field, San Juan County	Paradox	Gas
South Dakota	**8,691**	1954	Shell Oil's State 1-A, Buffalo Field, Harding County	Red River	Oil
W. Virginia	**8,410**	1946	Ohio Oil's Kuykendall et al 1, Canaan Valley Field, Tucker County	Oriskany	Gas
Michigan	**7,760**	1941	Gulf Refining's Bateson 1, Monitor Twp., Bay County (Abandoned)	Salina	Gas
Nebraska	**7,419**	1956	R. W. McDowell, Jr's State 778-1, McDowell Field, Kimball County	Dakota "J"	Oil
Nevada	**7,360**	1955	Shell's Eagle Springs Unit 15-35, Eagle Springs Field, Nye County	Tertiary	Oil
Maryland	**7,100**	1953	Snee & Eberly's McCullough Heirs 1, Garrett County	Chert	Gas
Kansas	**6,332**	1956	Republic Natural Gas' Hanke 1, Hugoton (Deep) Field, Stevens County.	Morrow	Gas
Virginia	**6,158**	1954	Clinchfield Coal's Std. Banner Coal 152, Ervington Dist., Dickenson Co.	Silurian	Gas
Ohio	**5,822**	1941	East Ohio Gas' Elizabeth Phillips 1, Sandyville Field, Harrison County.	Clinton	Gas
Arizona	**5,392**	1956	Franco Western Oil's Navajo 1, Franav Field, Apache County	Paradox	*Cond.
New York	**5,229**	1942	E. Kent Kane's Robert Lewis 1, W. Union Twp., Steuben County	Oriskany	Gas
Kentucky	**5,170**	1932	United Carbon's Howe 1, Big Sandy Field, Pike County	Devonian	Gas
Illinois	**4,780**	1943	Kingwood Oil's Shanafelt 24-A, Salem Field, Marion County	Trenton	Oil
Washington	**4,130**	1957	Sunshine Mining's J. W. Tanner-Medina 1, Grays Harbor County	.....	Oil
Tennessee	**3,107**	1954	Greenup-David et al's Coal Creek 1, Briceville Field, Anderson County.	Chattanooga	Gas
Indiana	**3,093**	1953	Hartman & Jordan's Comm. Albert Aldrich & J. C. Ellis 1, Welborn, North Field, Posey County	McClosky	Oil
Missouri	**1,444**	1940	Cities Service's Jim Cook 1, Tarkio Field, Atchison County	Bartlesville	Oil

* Gas-condensate production.

well is Richardson and Bass et al's Humble L L & E 1-L, producing from 20,745 feet in the Lake Washington field, South Louisiana. The well was completed May 5, 1956, through perforations at the 21,419-21,435 and 21,443-21,465 foot intervals, and was plugged back to 20,745 feet last year.

South Louisiana also holds the nation's offshore depth record, with Hunt Oil's gas-condensate producer in the Coon Point field.

New State Records. Eight areas reported new record depths for producing wells during 1957 — Oklahoma, South Louisiana offshore, Wyoming, Texas Gulf Coast, Mississippi, North Dakota, Arkansas and Washington.

Oklahoma's British American Krieger 1, South Louisiana's offshore Hunt Oil State 758-2 and Wyoming's Pure Oil Bad Water Unit 1 entered the 16,000-foot category for the first time last year.

The Texas Gulf Coast has a new producing well in the 14,000-foot bracket, Phillips' O'Daniel 1, producing from 14,747 feet in the Alta Loma field, Galveston County. Other wells producing from record depths for the first time include:

- Mississippi's Skelly and Kin-Ark Oil B. L. Herring 1, producing from 13,556 feet in the Dexter field, Marion County.
- North Dakota's Amerada Herfindahl-Kvam Unit 1, 11,744 feet, Beaver Lodge-Tioga field, Williams County.
- Arkansas' Phillips et al Talley-B-1, 9484 feet, Plainfield field, Columbia County.
- Washington's Sunshine Mining J. W. Tanner-Medina 1, 4130 feet, Grays Harbor County.

INCREASES PRODUCTION by eliminating tubing breathing and buckling, thus lengthening the effective pump stroke and raising volumetric efficiency. While it is often difficult to determine exactly how great such increases are, many operators have told us that they have experienced as much as 50% gain.

GREATLY REDUCES ROD, TUBING AND CASING WEAR by eliminating the chief causes of such wear—tubing breathing and buckling. Many Baker Compensating Tubing Anchors, installed over a year ago in wells that **had been** averaging as high as 18 rod jobs per year, have been in continuous use ever since—**with no rod jobs yet!**

AUTOMATIC OPERATION eliminates the need for involved calculations and the application of tension from the surface. Since the Anchor is designed to allow only downward movement of the tubing, the exact amount of tension required to eliminate both breathing and buckling is automatically applied by the natural elongation of the tubing itself.

SAFE, POSITIVE RELEASE is accomplished by merely rotating the tubing to the right. There is also an emergency release, in the form of a Shear Ring, for extreme conditions.

You'll never know how profitable your pumping well can be...

UNTIL YOU INSTALL THE ALL NEW AUTOMATIC...

BAKER
MECHANICAL COMPENSATING TUBING ANCHOR
PRODUCT NO. 717-B

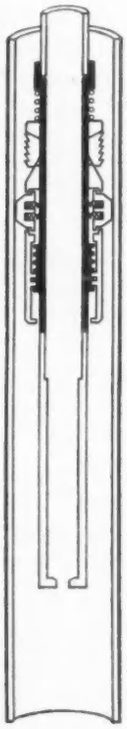
Pays for itself—day after day after day!

For further information, write for Bulletin No. 337. Address:
Baker Oil Tools, Inc., Box 2274, Terminal Annex, Los Angeles 54, California

BAKER OIL TOOLS, INC.
HOUSTON · LOS ANGELES · NEW YORK

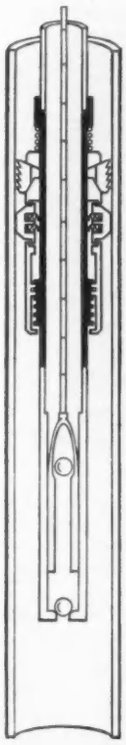
A

Tubing run-in, Anchor not engaged



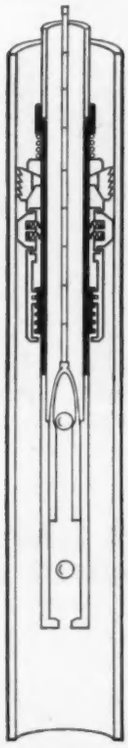
B

Pump in place, Anchor engaged. Tubing stretches with down-stroke of pump, Anchor is moved downward.



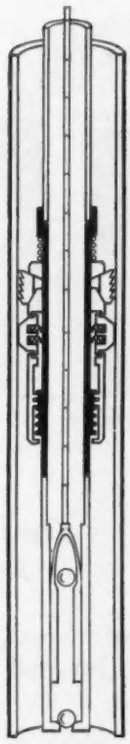
C

Up-stroke does NOT move Anchor or tubing. Succeeding down-strokes move Anchor downward until . . .



D

Maximum elongation due to increasing fluid load has occurred. Tubing is in proper tension to eliminate both breathing and buckling



WHAT DOES COMPENSATING MEAN?

"COMPENSATING" means that the tubing is allowed to adjust itself to compensate for any changing well condition that requires additional tension in the producing string. The above illustrations show how the Anchor is adjusted downward by one factor (in this case the increasing fluid load in the tubing) causing tubing elongation. Any other factor (temperature rise, annulus decline, etc.) requiring an increase in tubing tension, is automatically compensated for in a similar manner.

HOW DOES IT WORK?

In order for a tubing anchor to accomplish complete elimination of both breathing and buckling, it is necessary for it to be so designed and constructed that it will continually catch and maintain the tubing at the lowermost point in its downward travel during each adjustment. Only in this manner can the exact amount of tension required be kept in the tubing string at all times . . . and only Baker Compensating Anchors have this feature, as illustrated in the drawings below.

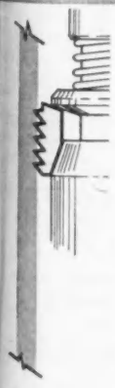


Fig. E

Slips of Anchor engaged in I.D. of casing, maintaining tension in tubing.

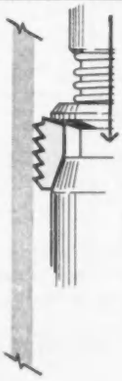


Fig. F

As tubing elongates, Slips momentarily disengage sufficiently to allow tubing to move downward.

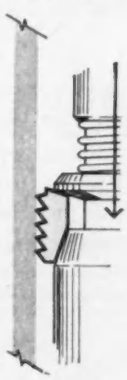


Fig. G

Anchor being moved down casing by tubing elongation. Note that Follow-Up Spring maintains contact between Cone and Slips, keeping Slips against casing so that . . .

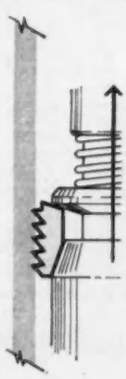
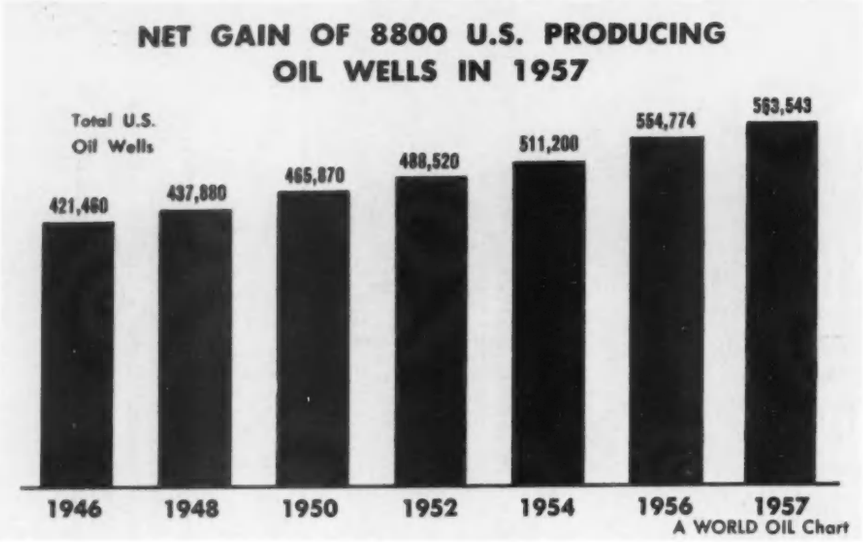
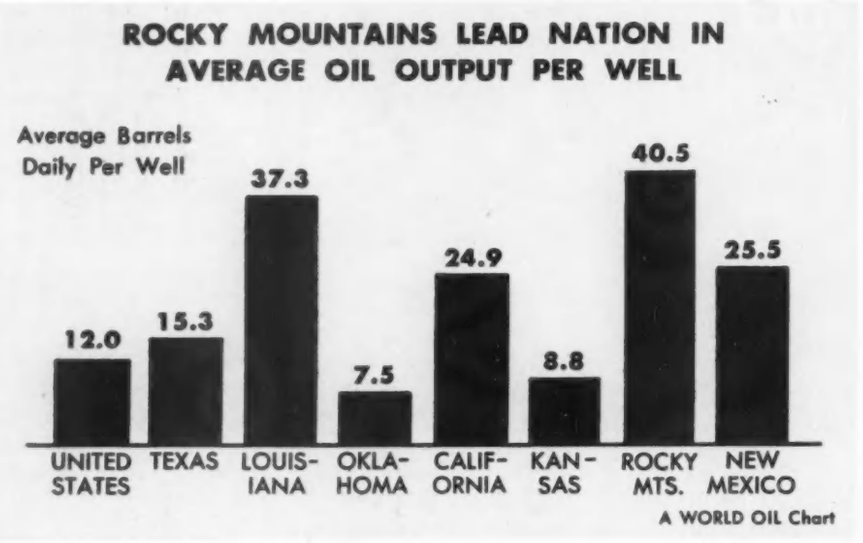


Fig. H

When tubing tries to reverse its direction and move upward, Slips are **immediately re-engaged,** maintaining proper tension—eliminating gouging, hammering.

Growth in producing oil wells is slower





THE RAPID postwar growth rate in number of U. S. producing wells slowed down sharply in 1957, after a near record year in 1956.

At the end of 1957, there was 563,543 domestic oil producing wells, 8769 more than in 1956. This was the smallest increase since 1947. In contrast, 17,092 more producing wells were reported in 1956 over the previous year.

Last year's slower growth rate resulted from two factors:

- The total of 27,364 newly completed oil wells was 3277 under the record total of 30,641 wells completed in 1956. In fact, last year was the first time since 1952 that a decrease in total new well completions had been reported.
- Total wells abandoned last year (18,595) increased 5046 over the 1956 total. This was the largest increase in well abandonments since 1951.

Crude Production Decreases. At the end of 1957, the average daily output for each oil producing well (12 barrels) was the lowest since 1950. The 1957 production rate per well was 1.4 barrels lower than the daily production rate in 1956.

Gas/Condensate Wells. Producing gas/condensate wells showed a marked increase in 1957 for a total of 7108 at the end of the year, compared with 5815 at the close of 1956. They produced an average of 22 barrels daily—2.4 barrels under 1956.

U. S. Producing Oil Wells and Daily Output Per Well, by Years

Sources: Producing wells and output from Bureau of Mines except as noted. Wells completed from WORLD OIL and predecessor, The Oil Weekly, except 1918-1920 from Bureau of Mines. Output per well obtained by dividing daily average U. S. production for year by average number between wells producing Jan. 1 and Dec. 31.

YEAR	Wells Producing at Year End	Changes During Year: Wells Completed	Changes During Year: *Wells Abandoned	Changes During Year: †Net Gain in Wells	Bbls. Prod. per Well per Day
1918	203,375	17,860	.....	.....	....
1919	227,000	21,041	—2,584	23,625	4.8
1920	251,000	24,278	278	24,000	5.0
1921	274,500	14,715	—8,785	23,500	4.9
1922	284,880	17,790	7,410	10,380	5.7
1923	290,100	16,182	10,962	5,220	6.6
1924	299,100	14,707	5,707	9,000	6.2
1925	306,100	17,029	10,029	7,000	6.5
1926	318,600	18,626	6,126	12,500	6.8
1927	323,300	14,382	9,682	4,700	7.7
1928	327,800	12,348	7,848	4,500	7.6
1929	328,200	15,362	14,962	400	8.4
1930	331,070	11,693	8,823	2,870	7.5
1931	315,850	7,011	22,231	—15,220	7.2
1932	321,500	10,530	4,880	5,650	6.7
1933	326,850	8,070	2,720	5,350	7.7
1934	333,070	13,119	6,899	6,220	7.5
1935	340,990	15,418	7,498	7,920	8.1
1936	349,450	18,704	10,244	8,460	8.7
1937	363,030	23,115	9,535	13,580	9.8
1938	369,640	19,106	12,496	6,610	9.1
1939	380,390	17,734	6,984	10,750	9.2
1940	389,010	19,843	11,223	8,620	9.6
1941	399,960	19,590	8,640	10,950	9.7
1942	404,840	10,977	6,097	4,880	9.4
1943	407,170	9,887	7,557	2,330	10.2
1944	412,220	13,502	8,452	5,050	11.2
1945	415,750	13,944	10,414	3,530	11.3
1946	421,460	16,087	10,377	5,710	11.3
1947	426,280	17,613	12,793	4,820	12.0
1948	437,880	22,197	10,597	11,600	12.8
1949	448,680	21,415	10,615	10,800	11.4
1950	465,870	23,775	6,585	17,190	11.8
1951	474,990	23,532	14,412	9,120	13.1
1952	488,520	23,371	9,841	13,530	13.0
1953	598,940	25,251	14,831	10,420	13.1
1954	511,200	28,063	15,803	12,260	12.6
1955	524,010	30,474	17,664	12,810	13.2
1955‡	537,682	30,474	16,802	13,672	12.7
1956	554,774	30,641	13,549	17,092	13.3
1957	563,543	27,364	18,595	8,769	12.1

* Wells abandoned or shut in. Minus sign (—) indicates shut in wells put on production. † Minus sign (—) indicates decrease in producing wells. ‡ WORLD OIL estimate.

U. S. Wells Producing Crude Oil and Lease Condensate, Methods of Producing, and Average Output Per Well, by State and Districts, at End of 1957

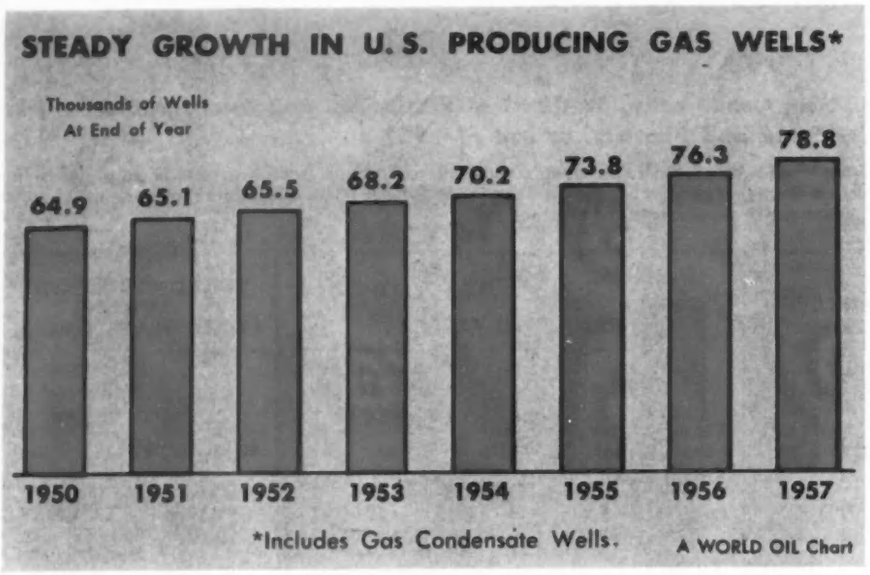
Data include only wells producing crude oil and lease condensate, handled as crude. Figures do not include inactive or shut-in wells, gas wells, or gas-condensate wells yielding condensate production through operation of plants. Data compiled by WORLD OIL, with cooperation of state conservation departments and other sources.

STATE or DISTRICT	CONDENSATE WELLS			CRUDE OIL WELLS					TOTAL CRUDE OIL AND CONDENSATE WELLS		
		Bbls. Daily Produced					Bbls. Daily Produced			Bbls. Daily Produced	
	Wells	Total	Per Well	Flowing	Art. Lift	Total Wells	Total	Per Well	Wells	Total	Per Well
Alabama	.....	.....	.....	**35**	**181**	**216**	**15,600**	**72.2**	**216**	**15,600**	**72.2**
Arkansas	*	**200**	.....	**246**	**5,173**	**5,419**	**82,550**	**15.2**	**5,419**	**82,750**	**15.3**
California	.....	.....	.....	**1,496**	**35,756**	**37,252**	**928,800**	**24.9**	**37,252**	**928,800**	**24.9**
San Joaquin Valley	.....	.....	.....	915	18,495	19,410	395,400	20.4	19,410	395,400	20.4
Coastal District	.....	.....	.....	419	5,513	5,932	240,100	40.5	5,932	240,100	40.5
Los Angeles Basin	.....	.....	.....	162	11,748	11,910	293,300	24.6	11,910	293,300	24.6
Colorado	.....	.....	.....	**572**	**1,612**	**2,184**	**143,400**	**65.7**	**2,184**	**143,400**	**65.7**
Florida	.....	.....	.....	.....	**11**	**11**	**1,300**	**118.2**	**11**	**1,300**	**118.2**
Illinois	.....	.....	.....	**213**	**37,828**	**38,041**	**238,950**	**6.3**	**38,041**	**238,950**	**6.3**
Indiana	.....	.....	.....	**300**	**4,816**	**5,116**	**31,350**	**6.1**	**5,116**	**31,350**	**6.1**
Kansas	.....	.....	.....	**103**	**38,466**	**38,569**	**340,100**	**8.8**	**38,569**	**340,100**	**8.8**
Kentucky	.....	.....	.....	**19**	**18,238**	**18,257**	**42,600**	**2.3**	**18,257**	**42,600**	**2.3**
Louisiana	**2,509**	**85,600**	**34.1**	**7,991**	**12,224**	**20,215**	**753,150**	**37.3**	**22,724**	**838,750**	**36.9**
North Louisiana	818	2,600	3.2	1,711	9,610	11,321	111,000	9.8	12,139	113,600	9.4
South Louisiana	1,691	83,000	49.1	6,280	2,614	8,894	642,150	72.2	10,585	725,150	68.5
Michigan	.....	.....	.....	**615**	**3,397**	**4,012**	**27,100**	**6.8**	**4,012**	**27,100**	**6.8**
Mississippi	*	**4,300**	.....	**327**	**2,005**	**2,332**	**99,700**	**42.8**	**2,332**	**104,000**	**44.6**
Missouri	.....	.....	.....	.....	**120**	**120**	.....	.....	**120**	.....	.....
Montana	.....	.....	.....	**585**	**3,261**	**3,846**	**74,350**	**19.3**	**3,846**	**74,350**	**19.3**
Nebraska	.....	.....	.....	**87**	**1,616**	**1,703**	**55,550**	**32.6**	**1,703**	**55,550**	**32.6**
Nevada	.....	.....	.....	.....	**2**	**2**	**150**	**75.0**	**2**	**150**	**75.0**
New Mexico	**804**	**5,500**	**6.8**	**4,259**	**5,809**	**10,068**	**256,800**	**25.5**	**10,872**	**262,300**	**24.1**
Northwest New Mexico	.....	.....	.....	139	213	352	4,800	13.6	352	4,800	13.6
Southeast New Mexico	804	5,500	6.8	4,120	5,596	9,716	252,000	25.9	10,520	257,500	24.5
New York	.....	.....	.....	.....	**19,200**	**19,200**	**7,100**	**0.4**	**19,200**	**7,100**	**0.4**
North Dakota	.....	.....	.....	**543**	**395**	**938**	**38,350**	**40.9**	**938**	**38,350**	**40.9**
Ohio	.....	.....	.....	**130**	**14,700**	**14,830**	**16,400**	**1.1**	**14,830**	**16,400**	**1.1**
Oklahoma	.....	.....	.....	**2,264**	**75,623**	**77,887**	**581,100**	**7.5**	**77,887**	**581,100**	**7.5**
Pennsylvania	.....	.....	.....	.....	**69,700**	**69,700**	**19,750**	**0.3**	**69,700**	**19,750**	**0.3**
South Dakota	.....	.....	.....	.....	**3**	**3**	**200**	**66.7**	**3**	**200**	**66.7**
Tennessee	.....	.....	.....	.....	**35**	**35**	.....	.....	**35**	.....	.....
Texas	**3,754**	**60,000**	**16.0**	**48,098**	**125,861**	**173,959**	**2,657,550**	**15.3**	**177,713**	**2,717,550**	**15.3**
Dist. 1: South Central	42	450	10.7	422	6,907	7,329	49,750	6.8	7,371	50,200	6.8
Dist. 2: Middle Gulf	845	9,550	11.3	3,304	2,213	5,517	120,850	21.9	6,362	130,400	20.5
Dist. 3: Upper Gulf	1,070	29,500	27.6	4,892	7,839	12,731	378,200	29.7	13,801	407,700	29.5
Dist. 4: Lower Gulf-S.W.	588	6,550	11.1	5,098	6,874	11,972	197,000	16.5	12,560	203,550	16.2
Dist. 5: East Central	110	250	2.3	359	2,545	2,904	31,050	10.7	3,014	31,300	10.4
Dist. 6: Northeast	570	6,500	11.4	1,861	2,841	4,702	109,550	23.3	5,272	116,050	22.0
Dist. 6: East Texas Field	.....	.....	.....	10,003	9,251	19,254	160,050	8.3	19,254	160,050	8.3
Dist. 7-B: North Central	38	50	1.3	2,477	12,907	15,384	144,150	9.4	15,422	144,200	9.4
Dist. 7-C: West Central	99	4,200	43.4	3,038	4,608	7,464	150,700	19.7	7,745	155,000	20.0
Dist. 8: West	127	1,850	14.6	14,629	30,288	44,917	1,007,700	22.4	45,044	1,009,550	22.4
Dist. 9: North	145	400	2.8	1,766	28,641	30,407	205,450	6.8	30,552	205,850	6.7
Dist. 10: Panhandle	120	600	5.0	249	10,947	11,196	103,100	9.2	11,316	103,700	9.2
Utah	.....	.....	.....	**129**	**210**	**339**	**14,150**	**41.7**	**339**	**14,150**	**41.7**
Virginia	.....	.....	.....	.....	†	†	**50**	.....	†	**50**	.....
Washington	.....	.....	.....	**2**	.....	**2**	.....	.....	**2**	.....	.....
West Virginia	.....	.....	.....	.....	**12,700**	**12,700**	**5,950**	.....	**12,700**	**5,950**	**0.5**
Wyoming	*	**900**	.....	**513**	**6,074**	**6,587**	**306,050**	**46.5**	**6,587**	**306,950**	**46.6**
Total U.S. End 1957	**7,108**	**156,500**	**22.0**	**68,527**	**495,016**	**563,543**	**6,738,100**	**12.0**	**570,651**	**6,894,600**	**12.1**
‡Total U.S. End 1956	5,815	141,600	24.4	67,257	487,517	554,774	7,376,350	13.3	560,589	7,517,950	13.4

‡ Data by States in WORLD OIL Feb. 15, 1957, page 196.

* Arkansas, Mississippi & Wyoming have some gas-condensate wells, but data not available, being included in gas wells.

† Data not available.



Sizable gain in producing gas wells recorded in 1957

A RECORD number of gas and gas-condensate producing wells were being operated in the U. S. at the end of 1957. In operation were 78,869 gas and condensate producing wells, 2561 more than were in operation on the same date of the previous year.

The number of gas and gas-condensate producing wells has shown a steady uninterrupted growth each year since 1949. The rate of growth has been particularly rapid in recent years. The number in operation at the end of 1957 was 13,419 greater than five years ago, but only 15,193 larger than 10 years ago.

The rate of growth during 1957 was slightly larger than in 1956, depite the decrease in total U. S. drilling activity. Although there were nearly 9 percent fewer wells completed in the U. S. during 1957, there was little change in the number of gas and gas-condensate producing wells. A total of 4475 new gas and gas-condensate producing wells were drilled in 1957, only 20 less than in 1956.

It seems probable that a smaller rate of growth may be experienced during 1958. Forecasts indicate a sharp decrease will occur in U. S. drilling activity, which presages fewer new gas and gas-condensate producing wells are likely to be completed in 1958.

Pennsylvania leads with 16,000 gas producing wells, followed by West Virginia with 14,000.

Texas, the leading gas producing state, comes next with 13,291 wells, made up of 9537 gas wells and 3754 gas-condensate wells. At the end of 1957, the state had 359 more gas wells and 456 more gas-condensate producing wells than 12 months before.

The Texas Panhandle leads other Texas areas in gas wells with 4121 at the end of 1957.

U. S. Producing Gas Wells and Daily Output Per Well, by Years
(Including gas-condensate wells)

Sources: Bureau of Mines except as noted. Output per well obtained by dividing daily average gross production from gas wells for year by average number between wells producing Jan. 1 and Dec. 31.

YEAR	Wells Producing at Year End	Changes During Year: [1]Wells Completed	[2]Wells Abandoned	[3]Net Gain in Wells	[4]Mcf. Prod. Per Well Per Day	YEAR	Wells Producing at Year End	Changes During Year: [1]Wells Completed	[2]Wells Abandoned	[3]Net Gain in Wells	[4]Mcf. Prod. Per Well Per Day
1929	[5]53,545	3,107	[6]	[6]	[6]	1944	58,780	3,078	1,498	1,580	172
1930	[5]55,020	2,971	1,496	1,475	[6]	1945	60,600	3,192	1,372	1,820	178
1931	[5]55,756	2,067	1,331	736	[6]	1946	62,740	3,562	1,422	2,140	169
1932	[5]54,156	1,079	2,679	—1,600	[6]	1947	63,676	3,720	2,784	936	163
1933	[5]53,660	1,190	1,686	—496	[6]	1948	64,212	3,312	2,776	536	196
1934	54,130	1,496	1,026	470	[6]	1949	63,346	3,499	4,365	—866	214
1935	53,790	1,802	2,142	—340	[6]	1950	64,900	3,480	1,926	1,554	239
1936	54,500	2,375	1,665	710	75	1951	65,100	3,542	3,342	200	273
1937	55,050	2,732	2,182	550	81	1952	65,450	3,693	3,343	350	286
1938	53,770	2,143	3,423	—1,280	79	1953	68,223	3,806	1,033	2,773	291
1939	55,530	2,030	270	1,760	92	1954	70,192	4,219	2,250	1,969	291
1940	53,880	2,265	3,915	—1,650	105	1954[1]	72,195	4,219	247	3,972	283
1941	55,500	3,279	1,659	1,620	125	1955[1]	73,802	4,169	2,562	1,607	291
1942	56,150	2,790	2,140	650	142	1956[1]	76,308	4,495	1,989	2,506	302
1943	57,200	2,390	1,340	1,050	155	1957[1]	78,869	4,475	1,914	2,561	309

[1] WORLD OIL data [2] Wells abandoned or shut in Minus sign (—) indicates shut in wells put on production [3] Minus sign (—) indicates decrease in producing wells [4] Thousand cubic feet. [5] Average during year. [6] Not available.

U. S. Gas and Gas-Condensate Wells Producing at End of Year, 1956 and 1957
Data include: Wells producing gas and gas-condensate; no wells producing crude oil; no shut in wells

State or District	END OF 1956: Gas Wells	END OF 1956: Gas Cond. Wells	END OF 1957: Gas Wells	END OF 1957: Gas Cond. Wells
Arkansas	240	93	219	*
California	362	.....	350	.....
San Joaquin	350	.....	341	.....
Coastal District	10	.....	6	.....
Los Angeles Basin	2	.....	3	.....
Colorado	150	.....	681	*
Illinois	25	.....	53	25
Indiana	375	.....	350	.....
Kansas	5,450	.....	6,014	.....
Kentucky	4,200	.....	4,300	9
Louisiana	2,413	2,245	2,363	2,509
North Louisiana	2,306	811	2,301	818
South Louisiana	107	1,434	62	1,691
Michigan	293	.....	338	.....
Mississippi	6	224	471	*
Missouri	8	.....	4	.....
Montana	1,050	.....	659	*
Nebraska	35	.....	28	*
New Mexico	3,201	238	3,430	804
Northwest N.M.	2,480	.....	2,602	531
Southeast N.M.	721	238	828	273
New York	1,200	.....	1,200	.....
Ohio	6,910	.....	6,890	.....
Oklahoma	4,400	.....	4,407	*
Pennsylvania	16,100	.....	16,000	.....
Tennessee	29	.....	29	.....
Texas	9,178	3,298	9,537	3,754
Dist. 1: S. Central	47	38	43	42
Dist. 2: Mid. Gulf	826	728	907	845
Dist. 3: U. Gulf	635	935	757	1,070
Dist. 4:L.Gulf-S.W.	1,660	532	1,634	588
Dist. 5: E. Central	37	105	51	110
Dist. 6: Northeast	1,179	525	1,160	570
Dist. 7-B: N. Cent.	437	60	470	38
Dist. 7-C: W. Cent.	69	82	36	99
Dist. 8: West	240	125	239	127
Dist. 9: North	121	127	119	145
Dist. 10: Panhandle	3,927	51	4,121	120
Utah	.....	.....	47	*
West Virginia	14,200	.....	14,000	.....
Wyoming	226	39	316	*
†Miscellaneous	120	.....	75	.....
Total U.S.	70,171	6,137	71,761	7,108

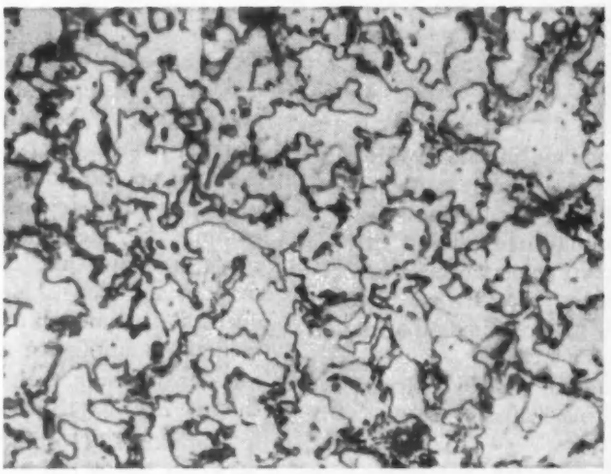
† Alabama, Maryland, North Dakota, South Dakota, Utah, Virginia.

* Arkansas, Colorado, Mississippi, Montana, Nebraska, Oklahoma, Utah, Wyoming have some gas-condensate wells, but data not available, being included in gas wells.

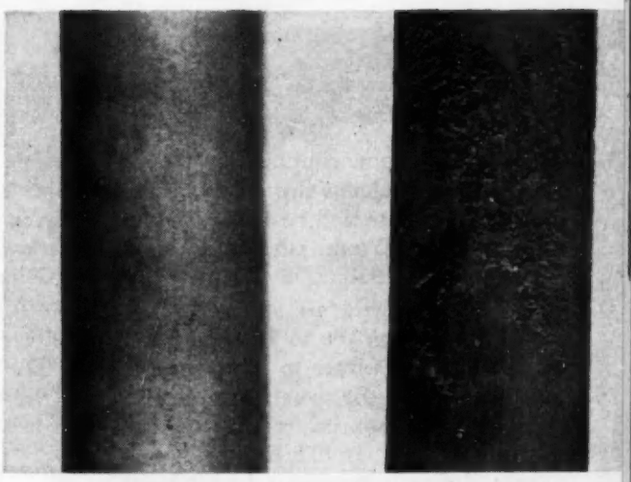
AXITE PLUNGER

own-time 3 ways

- **HIGHLY RESISTANT TO ABRASION**
- **RESISTANT TO CORROSION**
- **NON-GALLING**



DIAMONDS have a hardness of 10 on the Mohs scale. The new Axite plunger has a hardness of 9. Detail above (magnified 500 times) shows a completely integrated metal surface. Carbide and boride particles—dispersed throughout the alloy—are four times harder than Rockwell "C" 62 reading indicates.



HIGH SURFACE RESISTANCE to corrosion is demonstrated in this comparative photo. After seven days of submersion in a concentrated hydrogen sulfide solution, Axite plunger remains clean and smooth while plunger made of other material shows deep pitting. When I. D. and pin face are nickel-plated, the Axite plunger is virtually impervious to all forms of corrosion.

IT'S A PROVEN FACT—AXITE PLUNGERS LAST LONGER, WEAR LONGER.

Write for the new Axite Brochure.

AXELSON

There is no economical substitute for quality.

AXELSON MANUFACTURING COMPANY

Division of U. S. Industries, Inc.
6160 So. Boyle Avenue, Los Angeles 58, Calif.

Since 1898
products designed
to give oil a lift

AXELSON PRODUCTS ARE DISTRIBUTED EVERYWHERE

CALIFORNIA: Axelson Sales and Service Stores in all principal California fields
Hickey Pipe and Supply Co., (sucker rods), Los Angeles, Coalinga

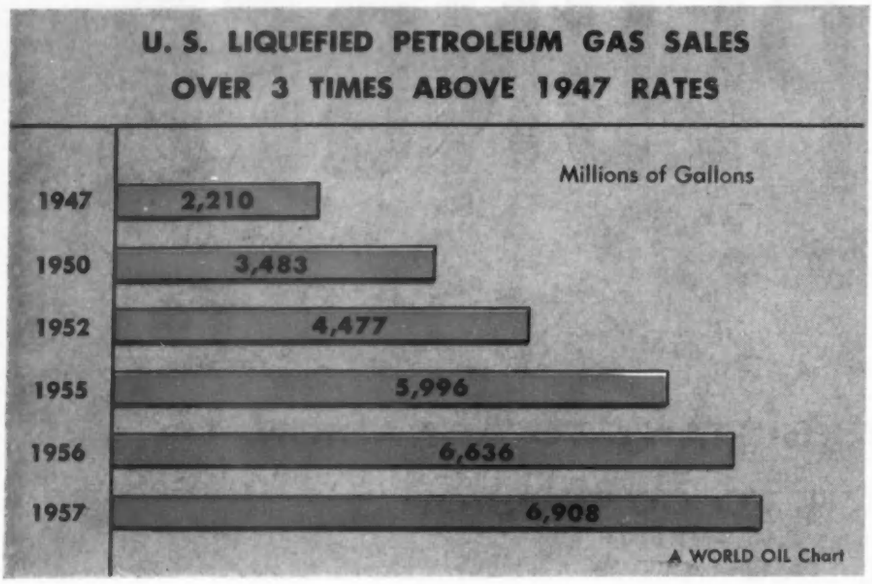
MID-CONTINENT AND EASTERN: Jones and Laughlin Steel Corp., Supply Division, Tulsa

ROCKY MOUNTAIN: Jones and Laughlin Steel Corp., Supply Division, Tulsa
Great Northern Tool and Supply Co., Billings

CANADA: Jones and Laughlin Steel Sales Co., Ltd., Supply Division, Calgary
Dominion Oil Fields Supply Co., Ltd., Calgary

FOREIGN: Represented in all major oil-producing areas.

© 1958—Axelson Manufacturing Company, Div. of U. S. Industries, Inc.



LPG sales are expected to hit new high in '58

THE OUTLOOK continues bright for liquefied petroleum gas. Although the rate of increase will be lower than in previous years, total sales will reach a new high in 1958.

Reason: There are still many potential markets yet to be developed. The industry winter to summer ratio is increasing. By pushing summer "load builders," i.e., crop drying, flame weeding, asphalt heating, aggregate drying and tractor fuel, dealers will be in a better position to capture and expand the house heating load. Gas air-conditioning still represents a tremendous potential load yet to be tapped.

By developing new fuel loads, utilizing modern business practices and by effective selling methods the industry should set new records in 1958, despite the anticipated over-all slowdown in the nation's economy.

The spectacular annual increases in LPG sales began tapering off last year. Preliminary figures indicate total sales rose to 6,907,000,000 gallons, 272,000,000 gallons or 4.1 percent over 1956 sales. This compares with a 10.6 percent increase in sales during 1956 and a 17 percent increase in 1955.

Even though the 1956 sales increase was lower than in 1956 and 1955, the LPG industry experienced a healthier growth pattern than the petroleum industry in general and the nation's economy as a whole.

Following is a breakdown of 1957 LPG sales according to uses:

Domestic and Motor Fuel. Combined domestic and motor fuel LPG sales totaled an estimated 3,943,300,000 gallons in 1957. This is a 4.5 percent (168,800,000 gallon) increase over 1956.

The most important factor in domestic growth continues to be house heating as more people demand the convenience of modern gas heat. As natural gas distribution facilities are expanded and extended some heating loads are lost, but in practically all cases the net result is a gain due to more people becoming "gas conscious." The swing to central heating was more pronounced this year and "year-around weather conditioning" with gas represents a huge potential market still to be tapped.

Motor Fuel. It is estimated that 7.8 percent more LPG was used as motor fuel in 1957 than in 1956. This is an increase of 61,000,000 gallons and for an estimated total of 834,500,000 gallons.

Largest volume users of LPG motor fuel are irrigation pump engines, farm tractors and drilling rigs. Heavy rainfall during the growing season in the principal irrigated areas of the Great Plains states along with reduced drilling activity resulted in substantial drop in fuel consumption for these two uses. Despite this drop, the total volume of LPG used for motor fuel exhibited a healthy increase. This testifies to the tremendous growth of other engine fuel uses.

The fastest growing segment of the LPG motor fuel market is still industrial tractors and lift trucks. A high percentage of new units are now factory-equipped for LPG motor fuel. More than 40 percent of the LPG carburetor production (excluding farm tractors) is for lift trucks and industrial tractors.

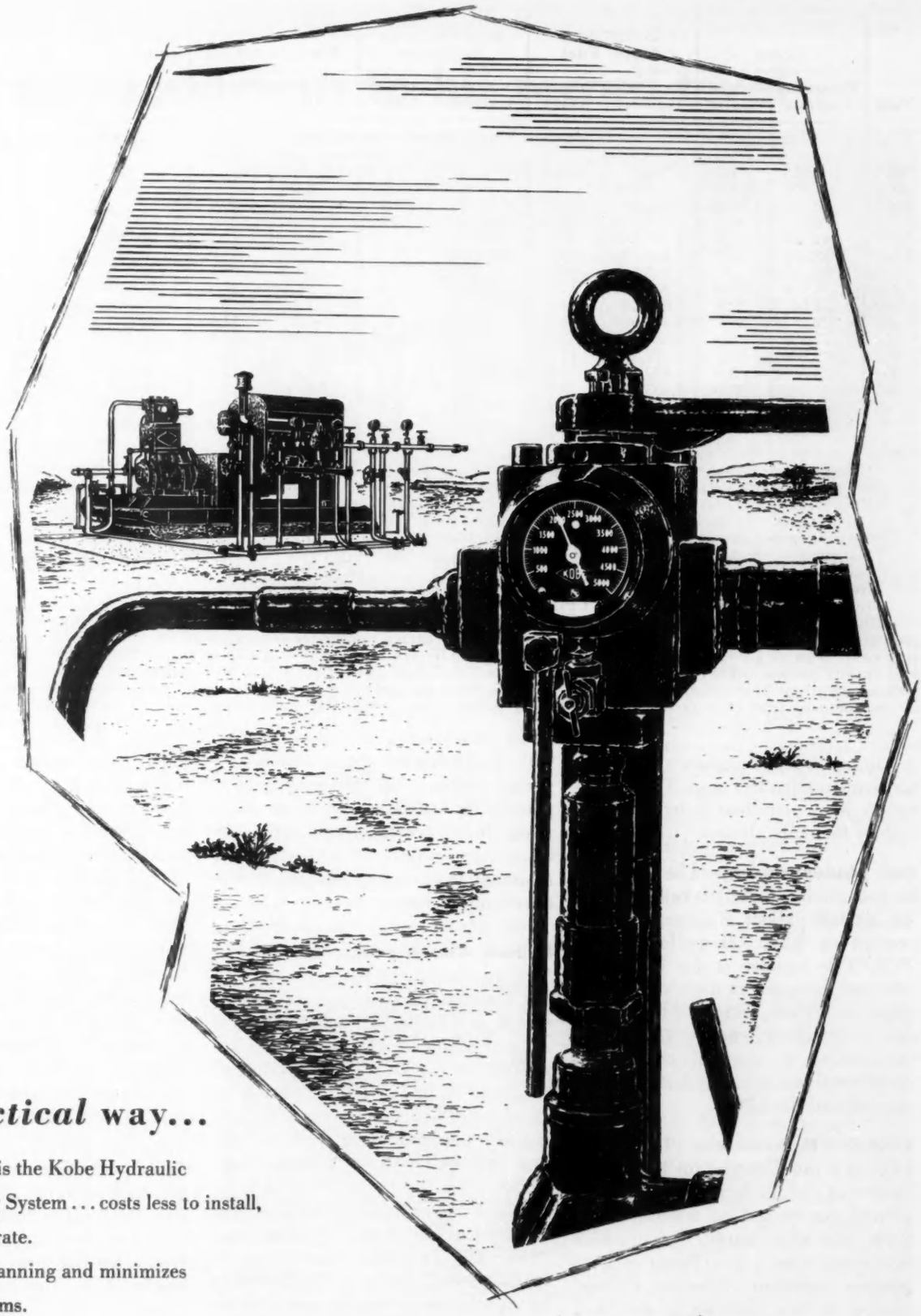
Appliances. Sales of LPG appliances and equipment during 1957 lagged behind the highs of 1956 in keeping with a general drop-off in all durable goods. Several reasons are given for this downward trend, including the fact that new housing starts are down and new family formations are down. However, in the over-all appliance and equipment field, LPG appliance and equipment sales are holding their own or above the average.

Domestic LPG range sales are estimated at 394,000 units—20 percent of all domestic gas range sales. "Built-in" ranges are becoming more and more popular, particularly in new homes.

Automatic LPG water heater sales are expected to be 304,200 which is more than 12 percent of all automatic gas water heaters. Warm air furnace sales are estimated at 720,000 of which approximately 10 percent (72,000) were for use with LPG.

Industrial and Miscellaneous. LPG used in industrial and miscellaneous applications during 1957 is estimated at 668,900,000 gallons—up 1.4 percent or 9,200,000 gallons over 1956. The increase in this category was held down by the "leveling-off" trend in industrial activity this year. However, this demand could be increased considerably by a severe December. Use of LPG in asphalt aggregate drying

Data for this article supplied by George R. Benz, manager, Enginering department; W. F. DeVoe, manager LPG sales, Sales department, and Paul W. Tucker, technical representative, Engineering department, Phillips Petroleum Company, Bartlesville.



The *practical* way...

to pump oil wells is the Kobe Hydraulic Oil Well Pumping System . . . costs less to install, maintain and operate.

Simplifies lease planning and minimizes production problems.

Easily transferred.

KOBE HYDRAULIC OIL WELL PUMPING SYSTEM

Free Pump
KOBE
HUNTINGTON PARK, CALIFORNIA

Annual Marketed Production of LPG

Year	Total		Domestic & Motor Fuel		Miscellaneous Industrial		Gas Manufacturing		Chemical Manufacturing		Rubber Components	
	Thousand Gallons	Percent Gain	Thousand Gallons	Percent Gain	Thousand Gallons	Percent Gain	Thousand Gallons	Percent Gain	Thousand Gallons	Percent Gain	Thousand Gallons	Percent Gain
1922	223	....	Sale of liquefied petroleum gas confined primarily to bottled gas business prior to 1928									
1925	404	7.2										
1928	4,523	314.6	2,600	....	400	....	1,500	....	.....	....	.....	....
1930	18,017	81.4	11,800	100.0	2,200	46.7	4,000	60.0	.....	....	.....	....
1935	76,955	36.2	21,380	20.9	47,894	47.6	7,581	20.4	.....	....	.....	....
1937	141,400	32.6	40,823	36.0	62,610	[2]	11,175	19.3	26,792	....	.....	....
1940	313,456	40.2	134,018	53.1	124,482	32.8	20,285	31.4	34,671	29.0	.....	....
1944	1,060,156	[4]	445,617	29.2	254,590	7.3	45,879	22.3	151,985	175.0	162,085	....
1945	1,276,766	20.4	533,262	19.7	256,577	0.8	53,849	17.4	224,291	47.5	208,787	28.8
1950	3,482,567	22.8	2,022,464	24.3	355,456	[3]	251,694	5.2	624,468	14.6	228,485	28.5
1951	4,227,275	21.4	2,456,804	21.6	269,408	[3]	281,692	11.9	844,507	35.2	374,864	64.1
1952	4,477,379	5.9	2,636,736	7.4	338,959	26.0	259,697	—7.8	870,990	3.1	370,997	—1.1
1953	4,932,009	10.2	2,977,418	12.9	374,233	1.04	222,430	—14.4	967,427	11.1	390,501	5.3
1954	5,125,533	3.9	3,174,012	6.6	401,615	7.3	191,932	—13.7	1,050,239	8.6	307,735	—21.2
1955	5,996,483	17.0	3,453,200	8.8	556,371[5]	38.5	213,760	11.4	1,366,942[6]	30.2	406,210	32.0
1956	6,635,763	10.6	3,774,492	9.3	659,730	18.6	212,293	—0.7	1,571,147	14.9	418,101	2.9
1957	6,907,700	4.1	3,943,300	4.5	668,900	1.4	203,500	—4.2	1,665,500	6.0	426,500	—2.0

* Household use plus other requirements by these customers such as irrigation pumping, tractor fuel, flame weeding, chicken brooding and similar uses. Included also is LP-Gas sold by domestic distributors but used for industrial purposes. Included also, in years following 1950, is LP-Gas sold direct by producers and marketers solely for fueling internal combustion engines.

[1] For all years prior to 1951, include LP-Gas sold for refueling internal combustion engines.

[2] No comparable due to segregation of chemical manufacturing.

[3] Not comparable due to change in method of reporting LP-Gas sold for refueling internal combustion engines.

[4] Not comparable due to inclusion of rubber components.

[5] Includes more complete coverage of refinery fuel.

[6] Includes more complete coverage of LPG mixture streams containing ethane and methane.

REMARKS: In this table total sales for all years except 1957 were obtained from U.S. Bureau of Mines reports. Distribution for the years 1931 to 1956 inclusive, was obtained from the same source. All other volumes were estimated by the writers. The total sales volume includes all LP-Gas (propane, butane, and propane-butane mixtures) when sold as such. Until 1944 the sale of pentane when sold for any purpose other than motor buel blending was included. Since then it has been excluded. It does not include butane when blended with heavier petroleum fractions for motor gasoline purposes. Inter-company sales transactions such as purchases of LP-Gas by one company from other companies and resold as LP-Gas have been eliminated in order to avoid duplication of sales figures.

is gaining wider acceptance as highway construction increases. This application is an excellent potential load builder for many dealers.

Gas Manufacturing. Use of LPG by gas utilities in 1957 is estimated at 203,500,000 gallons, a decrease of 4.2 percent or 8,800,000 gallons from 1956. This increase is due to expansion and extension of natural gas pipe lines. Utility demand for LPG is primarily determined by the severity of the weather. An unusually severe winter in some areas can quickly change the demand for LPG.

Chemical Manufacture. The sale of LPG as a raw material for the manufacture of chemicals and chemical intermediates gained at a somewhat lower rate than during the previous two years, due primarily to general business conditions. However, the operation of new facilities in the Gulf Coast and West Texas area, some of which were started up in late 1956, resulted in a gain of 6 percent or 94,400,000 gallons, to a total of 1,665,500,000 gallons for the year.

Most of the increase was due to the rapid growth in polyethylene capacity, with a number of plants coming on stream during 1957. Other polyolefin plastics or elastomers, such as polypropylene, polybutylenes, and polybutadienes, received considerable attention but remained largely in the development stages.

Rubber Components. The use of LPG in manufacturing synthetic rubber components during 1957 is estimated as 426,500,000 gallons. This is an increase of 2 percent or 8,400,000 gallons over 1956. The actual total might be higher if it were possible to clearly distinguish between that going into manufacturing synthetic rubber and that used as chemical feedstocks.

The U. S. consumption of synthetic rubber was up about 8 percent over 1956. The fact that production increased only 2 percent is attributed to producers and consumers reducing inventories during the first half of 1957.

Supply. Thirty-two new plants were added last year, with an estimated production capacity of 1,200,000 gallons per day. This additional production capacity along with that resulting from expansion of existing plants was sufficient to offset the lower production from some plants, part of which was due to curtailed allowables. It is currently estimated that approximately 23 new plants having a production capacity of nearly 1,500,000 gallons per day will be added in 1958.

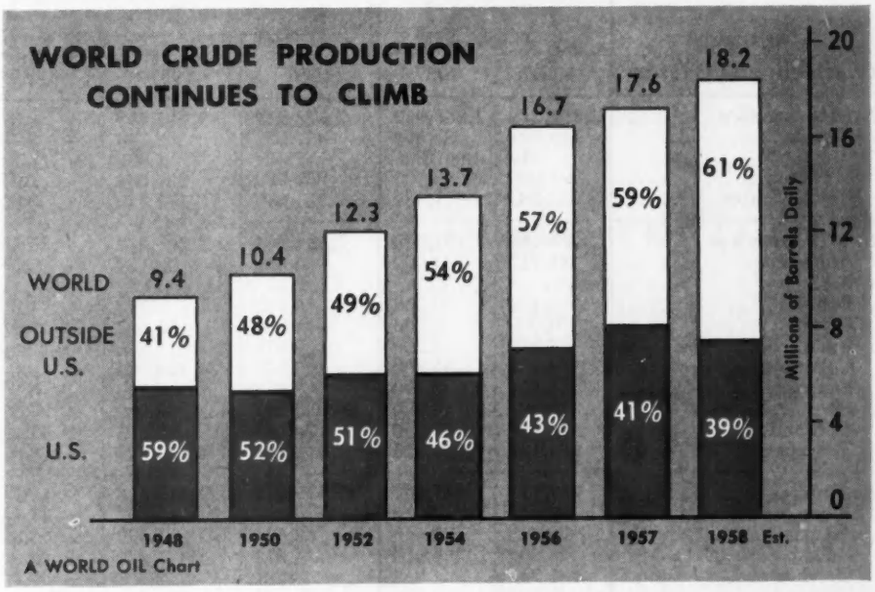
LPG storage capacity in both conventional aboveground steel storage installations continues to increase. It is estimated that the available underground storage capacity now totals close to 1,400,000,000 gallons, and there is now an additional 400,000,000 gallons planned or under construction.

Transportation. Expansion of LPG transportation facilities continued during 1957. One new interstate LPG pipe line went into operation in addition to several short pipe lines to carry feedstock to chemical plants. Several pipe lines went into operation carrying natural gas liquids, one pipe line is being considered for products service (including LPG), and two railroads have undertaken a joint study to determine the feasibility of constructing an LPG pipe line along their right-of-way.

World oil production to hit record level

WORLD CRUDE OIL production will continue its rise in 1958, despite declines anticipated in the U. S. and Venezuela, according to WORLD OIL forecasts. Production is expected to be almost 620,000 barrels per day more than during 1957 and slightly more than a million barrels greater than in 1956.

Offsetting declines this year in the world's No. 1 and No. 2 crude producing countries, where demand has wavered in the face of substantial excess oil producing ability, will be increased output in 30 other countries. A substantial part of this increased production will occur in the Middle East, which last year accounted for slightly more than 20 percent of total world oil output.



Crude Oil Production of World, U. S., and Countries Outside U. S., by Years

(Source: U. S. Bureau of Mines except part of 1957 and forecast for 1958 outside U. S. estimated by WORLD OIL.)

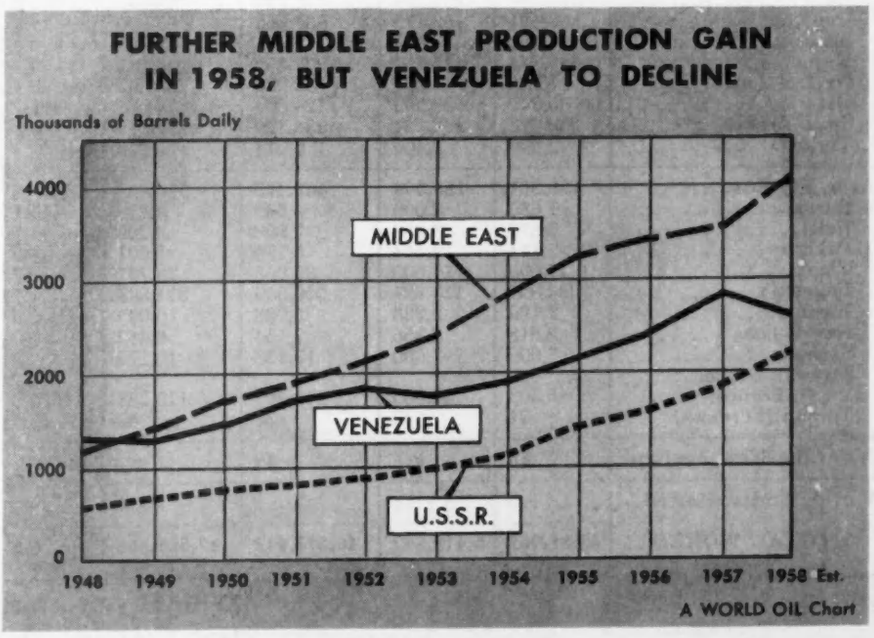
(THOUSANDS OF BARRELS)

	WORLD		U.S.		OUTSIDE U.S.	
Year	Total	Daily	Total	Daily	Total	Daily
1918	503,515	1,378	355,928	975	147,587	403
1919	555,875	1,523	378,367	1,037	177,508	486
1920	688,884	1,887	442,929	1,213	245,955	674
1921	766,002	2,098	472,183	1,294	293,819	804
1922	858,898	2,353	557,531	1,528	301,367	825
1923	1,015,736	2,783	732,407	2,007	283,329	776
1924	1,014,318	2,779	713,940	1,956	300,378	823
1925	1,068,933	2,928	763,743	2,092	305,190	836
1926	1,096,823	3,005	770,874	2,112	325,949	893
1927	1,262,582	3,459	901,129	2,469	361,453	990
1928	1,324,774	3,629	901,474	2,469	423,300	1,160
1929	1,485,867	4,071	1,007,323	2,760	478,544	1,311
1930	1,410,037	3,863	898,011	2,460	512,626	1,403
1931	1,372,532	3,760	851,081	2,332	521,451	1,428
1932	1,309,677	3,588	785,159	2,151	524,518	1,437
1933	1,422,146	3,951	905,656	2,481	536,490	1,470
1934	1,522,281	4,170	908,065	2,488	614,216	1,682
1935	1,654,488	4,532	996,596	2,730	657,892	1,802
1936	1,791,540	4,908	1,099,687	3,013	691,853	1,895
1937	2,039,231	5,587	1,279,160	3,505	760,071	2,082
1938	1,988,041	5,446	1,214,355	3,327	773,686	2,119
1939	2,086,160	5,716	1,264,962	3,466	821,198	2,250
1940	2,149,821	5,874	1,353,214	3,697	796,607	2,177
1941	2,220,657	6,084	1,402,228	3,842	818,429	2,242
1942	2,093,100	5,735	1,386,645	3,799	706,455	1,935
1943	2,256,637	6,183	1,505,613	4,125	751,034	2,058
1944	2,592,289	7,083	1,677,904	4,581	914,385	2,498
1945	2,594,697	7,109	1,173,665	4,695	881,042	2,414
1946	2,745,430	7,522	1,733,939	4,751	1,011,491	2,771
1947	3,022,139	8,280	1,856,987	5,088	1,165,152	3,192
1948	3,433,234	9,380	2,020,185	5,520	1,413,049	3,861
1949	3,404,132	9,326	1,841,940	5,046	1,562,192	4,280
1950	3,802,955	10,419	1,973,574	5,407	1,829,421	5,012
1951	4,282,730	11,734	2,247,711	6,158	2,035,019	5,576
1952	4,504,708	12,308	2,289,836	6,256	2,214,872	6,052
1953	4,786,989	13,115	2,357,082	6,458	2,429,907	6,657
1954	5,006,205	13,716	2,314,988	6,342	2,691,217	7,374
1955	5,641,439	15,456	2,484,428	6,807	3,157,011	8,649
1956	6,101,967	16,672	2,617,283	7,151	3,484,684	9,521
1957	6,418,842	17,586	2,617,467	7,171	3,801,375	10,415
1958 Est.	6,645,190	18,206	2,568,505	7,037	4,076,685	11,169

Daily average oil production of almost 18,206,000 barrels is forecast for 1958. This rate would permit total crude production for the year of—6.6 billion barrels, as compared with 6.1 billion barrels—or a daily average of 17,585,800 barrels—during 1957.

Producing highlights which figure prominently in the expected increase in world crude output have occurred in:

- Brazil—oil output is expected to rise rapidly even though it produced as much oil in the first six months of 1957 as in the entire previous year.
- Sicily—a significant discovery recently was made at Gela by Azienda Generale Italiana Petroli and a full year of Ragusa field production has been moved by pipe line.
- Algeria—Oued Gueterini field is in its death throes but a newly-completed pipe line put the major new Hassi Messaoud field on limited production early this year.
- Egypt—output is increasing with the estimated 500-million-barrel-reserve Belayim field moving into full production.



World Crude Oil Production, by Countries, 1956 and 1957, and Cumulative Through 1957

(Sources: U. S. Bureau of Mines except 1957 partly from private sources or estimated by WORLD OIL)

Continent and Country	Annual Production (Thousands of Barrels)		Daily Average Production (Actual Barrels)			Year's Production As Percent of World		Cumulative Production To January 1, 1958 (Thousands of Barrels)	
	1956	1957	1956	1957	% Diff. '56-'57	1956	1957	Total	As % of World
North America	**2,881,243**	**2,888,062**	**7,872,249**	**7,912,499**	**+ 1.0**	**47.21**	**44.98**	**61,874,490**	**60.48**
Canada	169,321	183,500	462,626	502,740	+ 8.7	2.77	2.85	959,571	0.93
Cuba	543	395	1,484	1,082	— 27.1	0.01	.....	3,800	.01
Mexico	94,096	86,700	257,093	237,534	— 7.6	1.54	1.35	3,063,236	2.99
United States	2,617,283	2,617,467	7,151,046	7,171,142	+ 0.3	42.89	40.78	57,847,883	56.55
South America	**1,036,535**	**1,192,922**	**2,832,064**	**3,268,279**	**+ 15.4**	**16.99**	**18.58**	**13,585,162**	**13.28**
Argentina	31,717	34,000	86,659	93,151	+ 7.5	0.52	0.53	661,592	0.65
Barbados	.....	.....	.....	.....	.....	.....	.....	8	.....
Bolivia	3,196	3,558	8,732	9,748	+ 11.6	0.06	0.05	18,379	0.02
Brazil	4,059	9,200	11,090	25,205	+ 27.3	0.06	0.15	19,609	0.02
Chile	3,542	4,309	9,678	11,805	+ 22.0	0.06	0.06	15,721	0.01
Colombia	44,132	45,260	120,579	124,000	+ 2.8	0.72	0.71	791,925	0.78
Ecuador	3,394	3,190	9,273	8,740	— 5.8	0.06	0.05	70,873	0.07
Peru	18,383	18,980	50,227	52,000	+ 3.5	0.30	0.29	521,773	0.51
Trinidad	28,929	33,800	79,041	92,603	+ 17.2	0.48	0.53	588,798	0.57
Venezuela	899,183	1,040,625	2,456,785	2,851,027	+ 16.0	14.73	16.21	10,896,484	10.65
Europe	**739,178**	**845,657**	**2,019,612**	**2,316,868**	**14.7**	**12.12**	**13.18**	**12,443,818**	**12.18**
Albania	2,441	2,010	6,669	5,507	+ 17.4	0.04	0.03	29,301	0.03
Austria	23,268	22,440	63,574	61,479	— 3.3	0.38	0.35	218,235	0.22
Bulgaria	1,600	1,960	4,371	5,370	+ 22.9	0.02	0.03	5,199	.....
Czechoslovakia	1,201	952	3,281	2,608	— 20.5	0.02	0.02	11,212	0.01
France	9,103	10,256	24,871	28,099	+ 13.0	0.15	0.16	51,479	0.05
Germany, West	24,894	28,113	68,016	77,022	+ 13.2	0.41	0.44	238,925	0.24
Great Britain	489	610	1,338	1,671	+ 24.9	0.01	0.01	7,919	.01
Hungary	7,630	4,620	20,847	12,658	— 39.3	0.13	0.07	93,730	0.10
Italy and Sicily	4,822	10,400	13,175	28,493	+116.3	0.08	0.16	22,108	0.02
Netherlands	7,652	10,512	20,906	28,800	+ 37.8	0.13	0.16	62,064	0.06
Poland	1,363	1,406	3,724	3,852	+ 3.4	0.02	0.03	290,923	0.28
Rumania	81,387	86,250	222,369	236,301	+ 6.3	1.33	1.34	1,717,225	1.68
U.S.S.R. (Russia)	571,208	663,300	1,560,678	1,817,260	+ 16.4	9.36	10.33	9,681,116	9.46
Yugoslavia	2,120	2,828	5,790	7,748	+ 33.8	0.04	0.05	14,382	0.02
Africa	**13,249**	**19,102**	**36,199**	**52,334**	**+ 44.6**	**0.22**	**0.30**	**267,755**	**0.26**
Algeria	293	95	653	260	— 60.2	0.01	.....	2,612	.....
Egypt	12,174	17,095	33,263	46,836	+ 40.8	0.20	0.27	257,828	0.25
French Equatorial	.....	1,100	.....	3,014	.....	.....	0.01	1,100	.....
Morocco	720	562	1,967	1,540	— 21.7	0.01	0.01	5,903	0.01
Angola	62	250	169	685	+305.3	.....	0.01	312	.....
Asia, Total	**1,431,744**	**1,473,099**	**3,911,869**	**4,035,888**	**+ 3.2**	**23.46**	**22.95**	**14,119,782**	**13.80**
Asia, Middle East	**1,262,943**	**1,286,605**	**3,450,664**	**3,524,945**	**+ 2.2**	**20.70**	**20.05**	**11,094,883**	**10.85**
Bahrain	11,014	11,691	30,093	32,030	+ 6.4	0.18	0.18	198,571	0.19
Iran	198,289	262,234	541,774	718,449	+ 32.6	3.25	4.08	3,129,150	3.06
Iraq	233,421	158,775	637,762	435,000	— 31.8	3.83	2.48	1,780,243	1.74
Israel	152	440	415	1,205	+190.4	.....	0.01	592	.....
Kuwait	399,874	415,350	1,092,552	1,137,945	+ 4.2	6.55	6.47	2,638,349	2.58
Neutral Zone	11,725	23,200	32,036	63,562	+ 98.4	0.19	0.37	49,768	0.05
Qatar	45,345	50,394	123,594	138,066	+ 11.7	0.74	0.78	261,479	0.26
Saudi Arabia	360,923	362,121	986,129	992,112	+ 0.6	5.91	5.64	3,029,853	2.96
Turkey	2,200	2,400	6,011	6,575	+ 9.4	0.04	0.04	6,878	0.01
Asia, Far East	**168,801**	**186,494**	**461,205**	**510,942**	**+ 10.8**	**2.76**	**2.90**	**3,024,899**	**2.95**
Burma	1,680	3,000	4,590	8,219	+ 79.1	0.03	0.05	.....	.....
India	2,876	3,358	7,858	9,200	+ 17.1	0.04	0.05	383,645	0.37
Pakistan	2,114	2,154	5,776	5,901	+ 2.2	0.04	0.03	.....	.....
China	11,000	10,500	30,055	28,767	+ 95.7	0.18	0.17	36,227	0.04
Indonesia	93,820	113,824	256,339	311,847	+ 21.7	1.54	1.77	1,833,923	1.79
Japan	2,169	2,226	5,926	6,099	+ 2.9	0.03	0.03	113,765	0.11
New Guinea	2,618	2,355	7,154	6,452	— 9.8	0.04	0.03	21,262	0.02
Sakhalin	7,000	7,000	19,126	19,178	+ 0.3	0.12	0.11	144,540	0.14
Sarawak-Brunei (Br. Borneo)	45,503	42,060	116,127	115,233	— 0.8	0.74	0.66	491,076	0.48
Taiwan (Formosa)	21	17	57	47	— 17.6	.....	.....	461	.....
Australia-New Zealand	**18**	.....	**49**	.....	.....	.....	.....	**114**	.....
World, Undistributed	.....	.....	.....	.....	.....	.....	.....	**1,044**	.....
TOTAL WORLD	**6,101,967**	**6,418,842**	**16,672,042**	**17,585,868**	**+ 5.5**	**100.00**	**100.00**	**102,292,165**	**100.00**

gives you the answer to basic drilling problems

FILTRATION

Baroid's competent men, up-to-date techniques and engineered products can keep the filtration properties of your mud best for the job. Filtration properties determine the thickness and character of the filter cake deposited on the wall of the hole and the volume and character of the fluid that is lost into the formation. An optimum cake thickness, filtrate volume, and filtrate character can prevent stuck drill pipe, caving shale, tight hole, and contribute to satisfactory casing and cement jobs as well as money making completions.

. . . by the control of basic mud properties

Baroid engineers are ready, willing and trained to control every mud property. Proper control of mud properties solves many of your basic drilling problems. This means faster, deeper, trouble free, less costly drilling and better completions — a successful operation.

Use Baroid's greater skill, experience and complete line of products to assure successful drilling. Your Baroid engineer can help you plan and carry out a complete program or meet any mud emergency. He can also show *what* products to use, and *why* and *how* they do the job right. Seeing is believing.

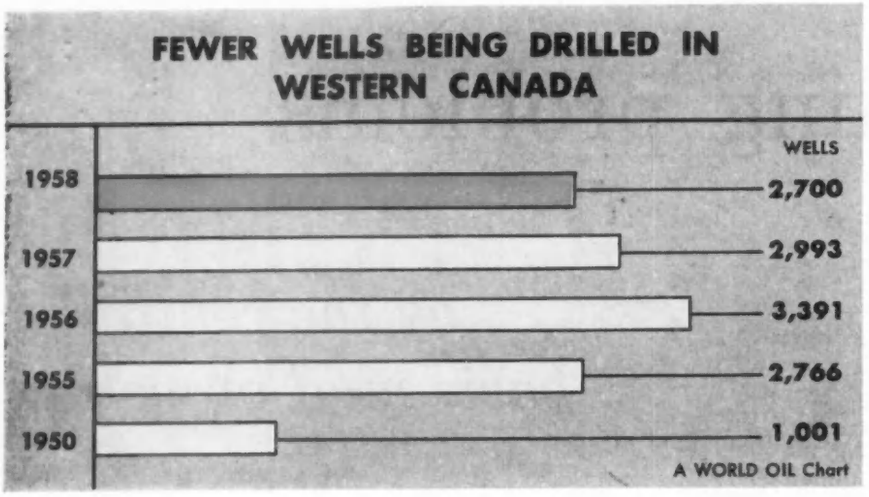
BAROID

BAROID DIVISION • NATIONAL LEAD CO.
Main Office: P. O. Box 1675, Houston 1, Texas

BAROID

B 5809

Canadian drilling continues downward in '58



CONTINUING THROUGH 1958 will be the decline in Canadian drilling activity which began during the second half of 1957. WORLD OIL estimates that 3150 wells and almost 12.6 million feet of hole will be drilled in Canada during 1958, tantamount to a decrease from last year of 293 completions and almost 2 million feet of hole.

Western Canada is expected to account for practically all of the drilling rate reduction as 2700 wells are expected to be drilled with an accompanying footage of 12 million feet. During 1957, 2993 wells were drilled in western Canada with a resultant footage of almost 14 million feet.

Responsible for the anticipated decrease are:

- Over-production in Alberta.
- Nearing of Pembina field to full development.
- Excess producing capacity in Saskatchewan.

Accompanying these factors are the anticipated leveling off in demand and the outlook for deeper drilling.

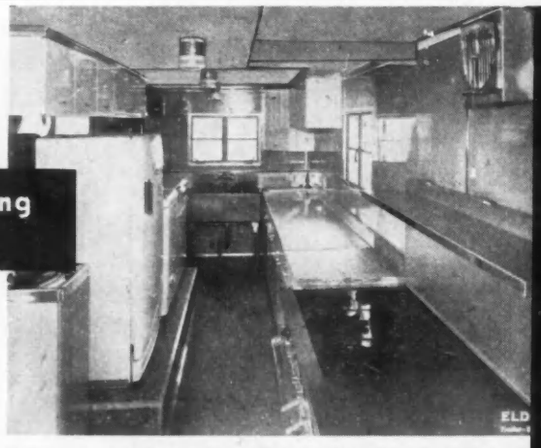
Forecast of Wells and Footage to Be Drilled in Canada During 1958

	Western Canada		Eastern Canada		All Canada	
	Wells	Footage	Wells	Footage	Wells	Footage
1958 Forecast	**2,700**	**12,000,000**	**450**	**560,000**	**3,150**	**12,560,000**
1957	2,993	13,968,509	*450	*560,000	3,443	14,528,509
1956	3,391	15,869,656	451	561,002	3,841	16,430,658

* 1957 Eastern Canada estimated.

Elder FIELD TRAILERS

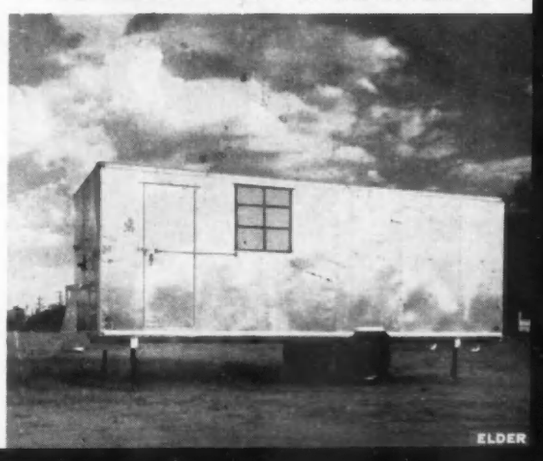
Designed *Specifically* for Field Crews Operating in Remote Locations



Elder trailers are *not* house trailers ... they are rugged field trailers, designed and built to give long, trouble-free service under the toughest, off-the-road conditions—especially in foreign countries. Equipped with large sand tires, air conditioning, rugged steel frame, light-weight aluminum body.

IMPORTANT! Elder's special lease plan saves you time and money. You need no capitol investment in trailers, and your *leased trailers are chargeable to expense!* You have no maintenance costs, no time-consuming paper work to worry about.

TURNKEY OPERATION! We'll operate your camp for you ... furnish personnel, food, fuel, laundry and pick-up truck.



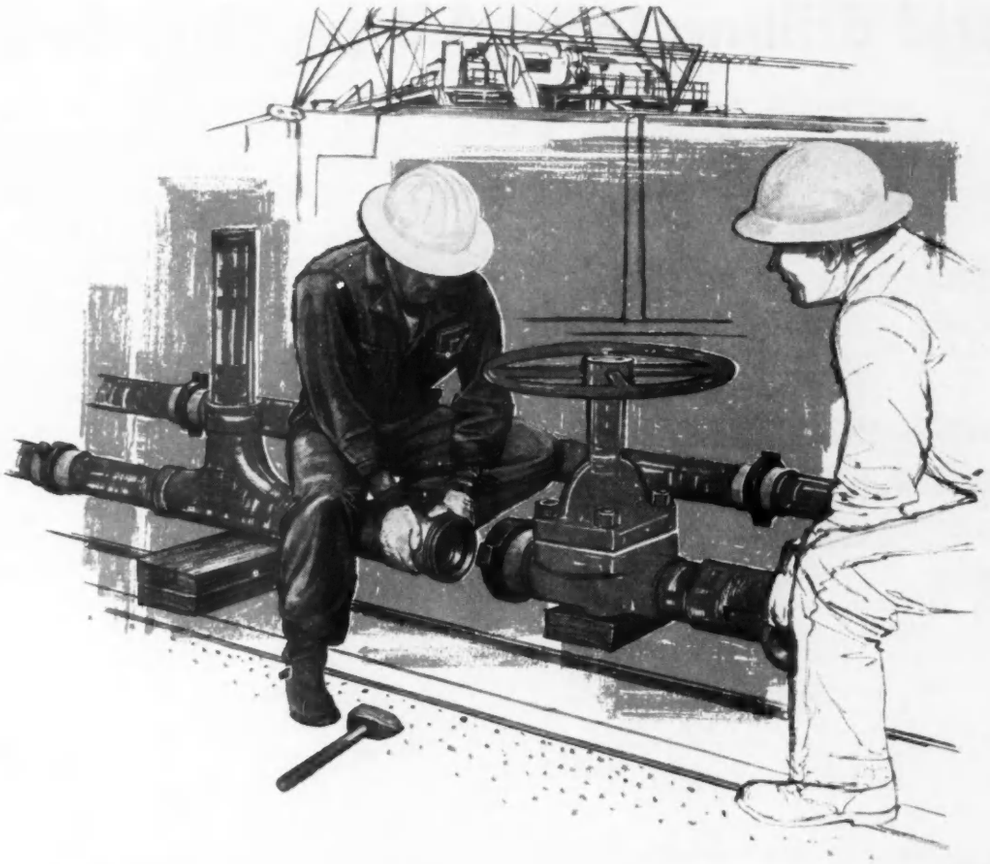
QUALITY BUILT TRAILERS FOR EVERY FIELD OPERATION

Kitchen, Diner, Sleeper, Shower, Office, Power Plant, Water Tank trailers

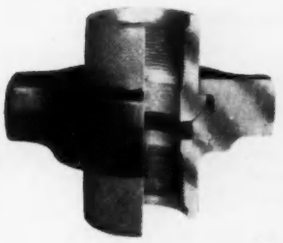
ELDER OIL FIELD FLOAT—SPECIAL RUNNING GEAR, LARGE SAND TIRES, HEAVY DUTY PLATFORM.

ELDER TRAILER AND BODY, INC.

P. O. BOX 9042 4830 RACE ST. DENVER 16, COLO. AMherst 6-1781



Hurry up!



YOU DON'T HAVE TO BABY WECO UNIONS

Your rigging-up goes at top speed when you've got WECO on the job. High grade steel, forged into strong subs and nuts enables WECO Unions to take the rough handling of fast make-up on job after job. Positive action of WECO's full circle ball and cone metal-to-metal seating provides perfect sealing under all service conditions.

You never have to worry about high-pressure, shock, surge or vibration breaking the seals on your WECO equipped piping.

WECO Unions are available at supply stores everywhere, in sizes 1″ through 12″, in pressures from 1,000 through 15,000 psi.

U-2-58

WECO®

WELL EQUIPMENT MFG. CORP.
HOUSTON, TEXAS

Division of CHIKSAN COMPANY *a subsidiary of* FOOD MACHINERY AND CHEMICAL CORPORATION

Free world drilling faces 4.3 percent decline

THE DRILLING of 5177 new wells is forecast for the Free World, outside U. S. and Canada, in 1958, a 4.3 percent drop from the 5408 new wells recorded (and partly estimated) in 1957. Increased drilling occurred in many parts of the Free World outside the Middle East during 1957, partly because of the Suez crisis and the fear that Middle East crude production might face obstacles in reaching world markets for a long time.

Now, however, drilling rates generally are returning to normal in the areas under consideration, with completions expected to increase in the Middle East and in Africa, while decreasing or holding steady elsewhere.

Venezuela is expected to account for much of the decrease. The outlook is for 360 fewer wells. Reliable sources in the country predict 1500 wells will be completed during 1958, a 19.4 percent drop from the all-time record of 1860 wells completed during 1957. However, the forecast would mean a 3.5 percent rise over 1956, an excellent year, when 1449 wells were completed.

A major contributing factor in this expected decrease in Venezuela is the general economic slow-down in many parts of the Free World, combined with a large imbalance in supply, which is excessive, and demand, which is declining.

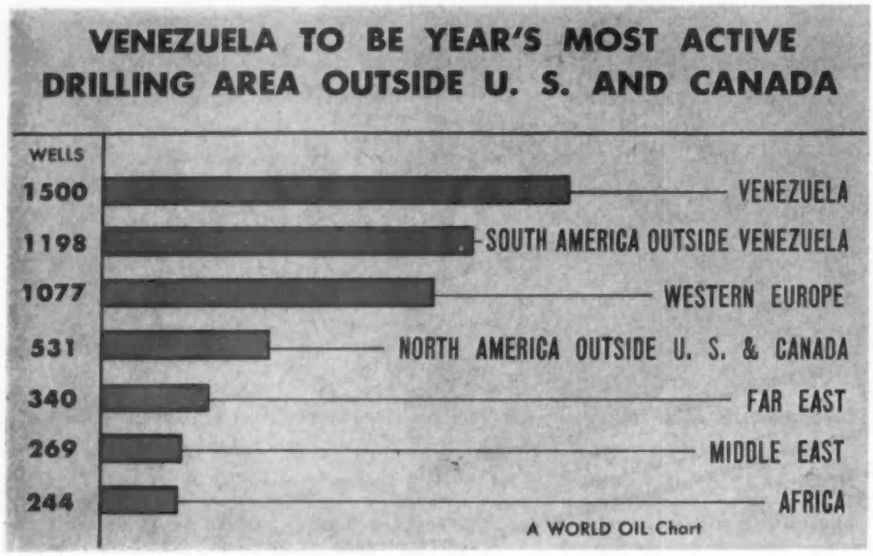
Venezuela's shipments to Western Europe will be much smaller than in 1957, when the Suez closing created the need for abnormal—but temporary—high volumes. Also, Venezuela will feel the impact of U. S. restrictions on crude oil imports, as will Canada.

In Mexico, where 389 wells were completed last year, 432 are expected to be drilled in 1958.

Western Hemisphere areas of anticipated increased drilling are spotty. Petrobras is rapidly increasing both production and drilling in Brazil, where completions this year may reach 130. In Argentina, Yacimiento Petroliferos Fiscales' emphasis on moderate-depth drilling in Comodoro Rivadavia, Santa Cruz, and Tierra del Fuego should boost the 1958 total to about 330 completions.

In Western Europe, West Germany, with 550 completions in 1957 and a like number forecast for 1958, drills half of the wells completed in Free Europe. Some decrease is expected in France, due to lack of risk capital, the essentially drilled-up status of Parentis field, and emphasis on exploration in Algeria.

In the Middle East, completions exceeded 200 for the first time during 1957, due largely to 54 wells drilled in the Neutral Zone.

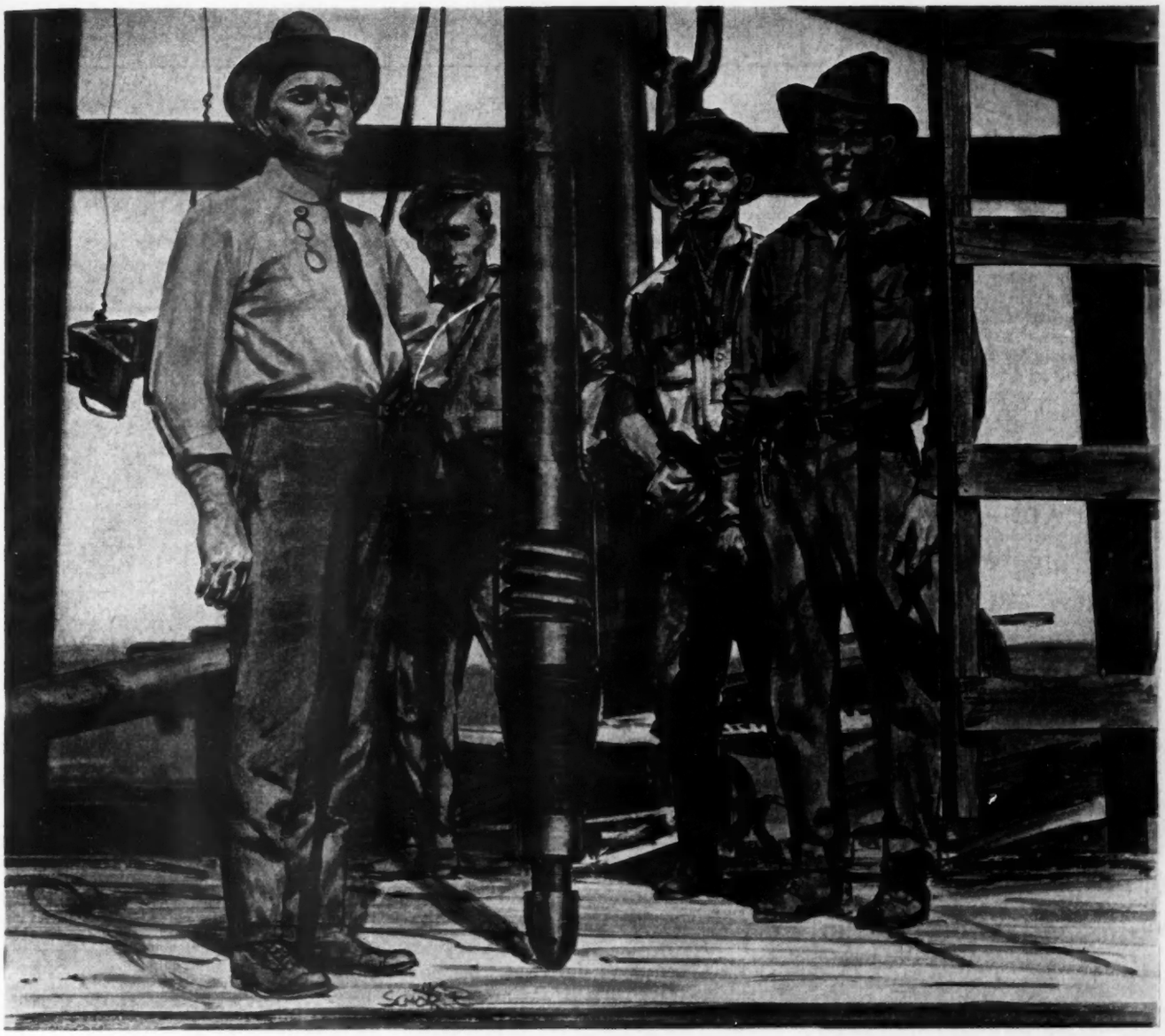


Free World Drilling Prospects—1958

(Exclusive of U. S., Canada, and U. S. S. R. and Soviet Satellite Countries)

Region	Wells Forecast 1958	Number of Wells Completed 1957*	1956	1955
North America, Outside U.S. and Canada	**531**	469	514	431
Alaska	**9**	6	1	4
Mexico	**432**	389	406	330
Cuba, Jamaica, Haiti, Dominican Republic	**90**	74	108	97
Central America	**18**	7	9	4
South America	**2,698**	3,012	2,636	2,354
Argentina	**330**	270	298	259
Brazil	**130**	100	45	73
Ecuador	**80**	100	156	216
Peru	**160**	175	199	219
Trinidad	**260**	275	262	228
Venezuela	**1,500**	1,860	1,449	1,163
Other South America	**238**	232	227	196
Western Europe	**1,077**	1,106	979	1,111
West Germany	**550**	550	518	567
Austria	**140**	140	144	123
France	**75**	100	107	92
Italy-Sicily	**185**	180	159	276
Other Western Europe	**127**	136	51	53
Middle East	**269**	227	164	113
Africa	**244**	212	154	131
Algeria-Morocco-Tunisia	**90**	89	81	89
Other Africa	**154**	123	73	42
Far East	**340**	375	374	474
Japan	**150**	150	126	218
Indonesia	**110**	150	138	133
Other Far East	**80**	75	110	123
Total Free World, Outside U.S. and Canada	**5,177**	5,408	4,830	4,618

* 1957 completions partially estimated in some areas.



JUST OVER THIRTY YEARS AGO El Dorado, Arkansas was booming. In progress was a drilling program, the size of which had seldom been seen until that time. More than an oil discovery was made at El Dorado for it was during that boom that the first Johnston Drill Stem Test was run. Since then, more than thirty years ago, over half a million drill stem tests have been run by Johnston personnel and with Johnston equipment.

No other similar service organization has accumulated such a wealth of experience.

A great number of problems had to be overcome in the early days of drill stem testing . . . equipment, test evaluation, and industry acceptance. The problems were overcome and drill stem testing was recognized as one of the most important precasing informational services available.

From the first, Johnston devoted practically all of its research and development effort to a single objective . . . the improvement of the testing tool design. With the best designed and workable equipment Johnston then perfected evaluation techniques.

Through the last thirty years Johnston has gained the priceless ingredient of real success . . . experience. There's no way of knowing just how many strings of pipe have been saved or the number of fields discovered since the Johnston brothers invented their first drill stem testing tool. All agree, however, that the industry has benefited greatly from Johnston's thirty years experience. Johnston equipment, methods, and personnel lead the field.

Remember that all drill stem tests are not alike . . . that Johnston will give you the best results, year in and year out.

Always call Johnston and be sure.

Johnston Testers, Inc., Houston, Texas; Long Beach, California; Calgary, Alberta, Canada.

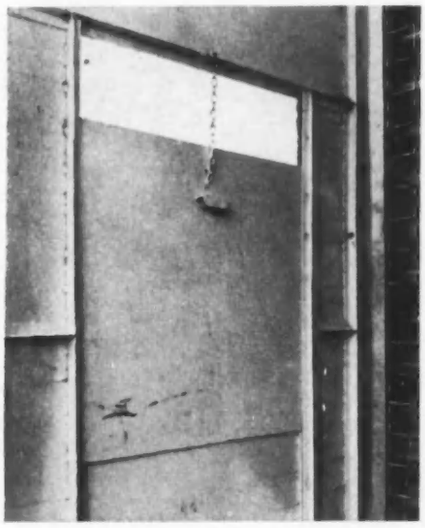
A World Of Experience

JOHNSTON TESTERS

DRILLING HINTS

These How-To-Do-It Ideas Can Save You Money

$10 is paid for each illustrated acceptable contribution. Mail to The Editor, WORLD OIL, P. O. Box 2608, Houston 1, Texas.



Rig Windows Made Safer With Special Construction

Usually around the rig, the windows are constructed so that they swing up and are braced open, or they slide up and are propped to keep them up. They depend on gravity to keep them closed, and for this reason they are a safety hazard. Windows that swing out and are braced open are constantly being bumped into, and they can fall and strike some one at the window. Windows that slide up and are braced or pinned can fall and strike someone at the window.

One way to avoid the dangers of both types is shown in the picture. This window opens by gravity and the construction is such that it can not fall and strike anyone. The materials necessary for construction are plate and angle iron and a short length of chain. The plate is cut so that the window opening is covered easily, and the angle irons are used to make channels in which the cover will slide. The angle iron is welded to the sides of the openings so that the plate will slide up and down between the wall of the building and the angle iron.

A stop made of a small piece of scrap plate is welded to the wall of the building low enough to allow the cover plate to slide down and leave the window completely open. A piece of angle iron is welded across the top of the window opening to stop the plate when it is in a closed position. A short piece of chain is welded near the top and on the center line of the cover plate of the window. A notch is cut in the piece of angle iron across the top of the window. This notch is in the middle of the window and is large enough to allow a link of the chain to slide into it sideways. This acts as a latch and holds the chain which in turn holds the window closed.

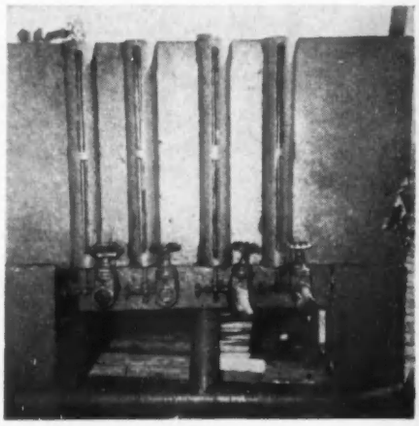
If the window is to be opened slightly, the chain latch can be loosened and the window opened the length of one link of the chain at a time. To make raising and lowering the window easier, a piece of bent plate is welded to the cover plate of the window to form a handle. This forms a useful window that is safe.

Mount Pipe Protectors For Fluid Level Indicators

If you use fluid level indicators on your compartmented lube tanks, the photograph shows a simplified protector for these instruments. These very effective guards are made from materials found around the rigs, and their cost is very low.

In the construction and mounting of these protectors, care must be taken that enough clearance is provided at the bottom of the gate to allow either removal or replacement of any tubes that may be broken in spite of these heavy duty guards.

The materials used are short joints



of scrap pipe. One pipe will make two guards. The length of pipe is cut in half along its length, and two slots are cut lengthwise along the middle of each of the pipe pieces. The guard is then tack welded to the tank so that the slots in the middle of the pipe are directly over the gage glass to form the finished protector.

Be sure to observe the basic rules of safety when welding the guards to the oil tanks as these oil tanks could be dangerous.

How-To-Do-It Ideas Earn Money, too!

WORLD OIL editors want how-to-do-it ideas, so your favorite short cut or invention could put money in your pocket! Write down the substance of your latest ideas and send them in with a picture or drawing of the installation . . . if accepted, $10 for each idea will be yours. Send those money-making ideas today to Hints Editor, WORLD OIL, P. O. Box 2608, Houston 1, Texas.

H C Smith
ROCK BITS

are field-tested FOR YOU!

THE FINAL PROOF IS IN THE DRILLING . . . and, with the aid of a full-size drilling rig, that's exactly how H. C. Smith is proving each new design or improvement before incorporating it into your next rock bit.

Field testing is *our* responsibility, not *yours*. That's why we have extended the scope of our continuing research and development program to include realistic sub-surface tests on all H. C. Smith equipment developed beyond the laboratory test stage.

Under lease arrangement with various drilling contractors, a rig of the 10,000-foot class is installed on H. C. Smith property whenever a sufficient series of tests has been scheduled. By testing in this way, under *actual* rather than simulated field conditions, we *know* that H. C. Smith Rock Bits are fully proven before we release them to the industry.

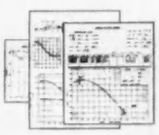
This thorough sub-surface testing procedure is a fitting adjunct to the other comprehensive design and development work we put into H. C. Smith Rock Bits:

DESIGN

Thousands of hours of engineering go into H. C. Smith Rock Bit design. Every part is designed and tested for effective action on bottom and for long service life.

METALLURGY

All steels used in the manufacture of H. C. Smith Bits are made to our own strict specifications. We test every lot to ensure that it meets our requirements. And our forging process is controlled to maintain maximum strength in all parts.



HEAT TREATMENT

Standard samples of every heat of steel are put through our regular heat-treating cycle before parts are made. Thus the reactions of every lot are predetermined—the hardness and carburization of every part of a Smith Bit is a known factor even before manufacture.

All of these careful steps add up to one BIG fact: that H. C. Smith ROCK BITS are

-every bit the best!

H C Smith

OIL TOOL CO.

GENERAL OFFICES, EXPORT OFFICES AND PLANT: COMPTON, CALIF.

BRANCHES IN ALL PRINCIPAL OIL CENTERS IN THE UNITED STATES AND CANADA

Catawissa
PERFECT SEAL
Unions

HOT FORGED from solid, rectangular steel bars, designed and produced for dependable, long-life service under the severest piping conditions!

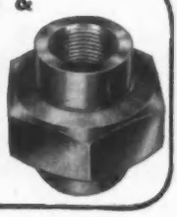
A TYPE FOR EVERY USE!
FOR ALL PRESSURES!
FOR ALL TEMPERATURES!

Standard & Double Extra Heavy
UNIONS
Available with screwed or socket weld ends. 3000-lb. sizes 1/8" to 3"; 6000-lb. sizes 1/8" to 2".

ORIFICE UNIONS
With screwed or socket weld ends. 3000-lb. and 6000-lb. service.

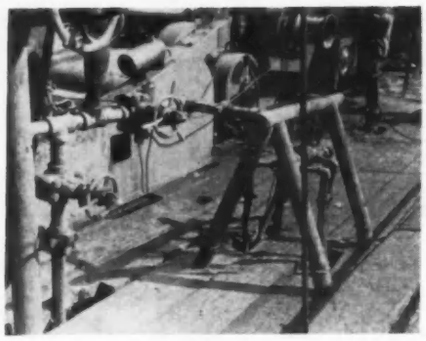
MALE & FEMALE UNIONS
With steel-to-steel, bronze-to-steel, stainless steel-to-steel or orifice seats. 3000-lb. service only.

FULL STAINLESS & FULL ALLOY STEEL UNIONS
With screwed or socket weld ends. 3000-lb. and 8000-lb. service.



WRITE FOR CATALOG 56
showing the complete Catawissa line of Perfect Seal Products

CATAWISSA VALVE AND FITTINGS COMPANY
25 Mill Street • CATAWISSA, PA.

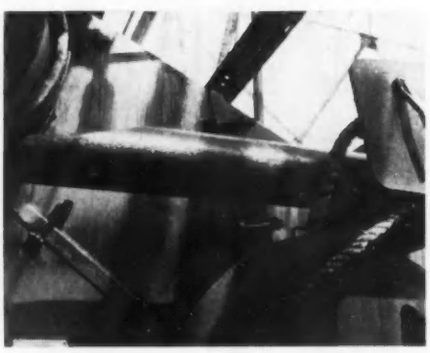


Sawhorse Makes Support For BOP Control Lines

A simple means of rigging up the blowout preventer control lines may be arranged by making a saw horse from two-inch pipe and attaching the controls to it. This allows the simple breaking out of the unions for quick connections at the new location.

The assembly is made by taking 2½-inch pipe and building the horse. The legs are blanked off from the top piece and a two-inch coupling welded into the side for the pressure line from the stand pipe. One-inch connections are then welded into the bottom of the cross piece for connecting through the floor to the blow out preventers.

The three way valves are then connected to these outlets and set at a handy working distance from the derrick floor. The unions are placed on ells below the valves so that the entire assembly can be disconnected and reconnected with quick acting hammer unions.



Guard Controls Swing Of Back-up Tong Chain

The make-up or back-up tong chain on drilling rigs jerks and flails around when tonging and can be dangerous to the driller if this flailing is not controlled or guarded.

One way to control the swing of the chain is shown in this photo. A short length of three or four-inch pipe tapered on one end is placed so that the feed-off of the cathead will allow the chain to pass through this joint of pipe and over the chain guide. A piece of plate is welded to the chain guide mount and the guard is welded to this plate for support. At the cathead, the pipe is welded to a piece of angle iron that is welded to the frame of the drawworks.

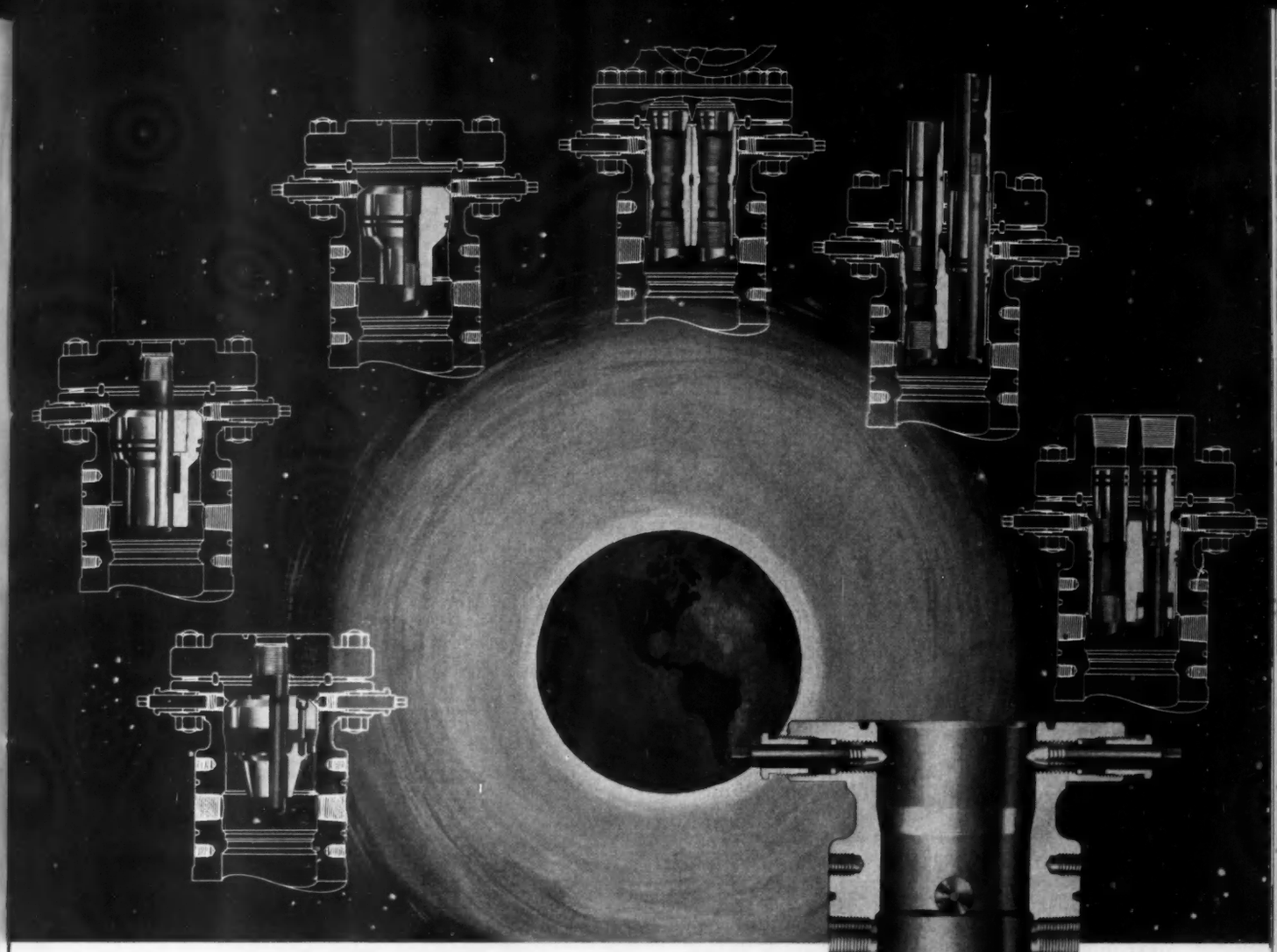
This gives the guard a firm permanent position, and at the same time enables it to keep the chain from swinging, or, in case of a break, keeps it from snapping over to one side or the other and injuring someone.

Rope Storage Reels Hook Onto Side of Doghouse

A time-saving method of mounting the small reels on which are stored miscellaneous lengths of new and used soft rope is contained in the installation devised by one contractor. On the side of his combination doghouse-tool house, he burned four small round holes, two for each of the reels.

Brackets for the reels are of one-inch pipe, strengthened by triangular gussets of light plate. Each bracket has a small hook on the wall end of the top member, and a small pad is welded to the lower end of the vertical member. To install the reel it is necessary only to hook the brackets in their respective holes, the small pads providing a broad surface which rests against the doghouse wall.

Such a reel keeps odd lengths of rope off the ground, and, when a length is needed, it can be pulled off quickly. A crank at the end of the reel speeds handling of the rope.



O·C·T HAS MADE NEWS!

. . . the *FIRST* Universal Tubing Head for *DUAL STRING* or *SINGLE STRING* completions . . .

Now, for the first time, it is possible to install a tubing head which has a complete line of interchangeable dual string and single string tubing hangers.

The O-C-T Universal Tubing Head is versatile . . . because an operator may singly or dually complete a well at will with complete control throughout the operation.

The complete range of interchangeable tubing hangers possible with this revolutionary tool means that any last minute change in complete procedures (from single to dual or vice versa) can be made without changing tubing heads or using special attachments.

In short this is the answer to an industry demand—

● Control at all times ● Versatility ● Ease of installation ● Economy ● Wide range (600 through 2900 series, flange sizes from 6″ to 10″)

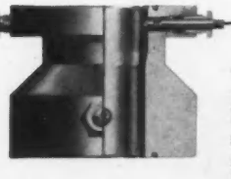
We will be glad to send complete information on request.

where progress is a daily practice.....

O·C·T

OIL CENTER TOOL CO.

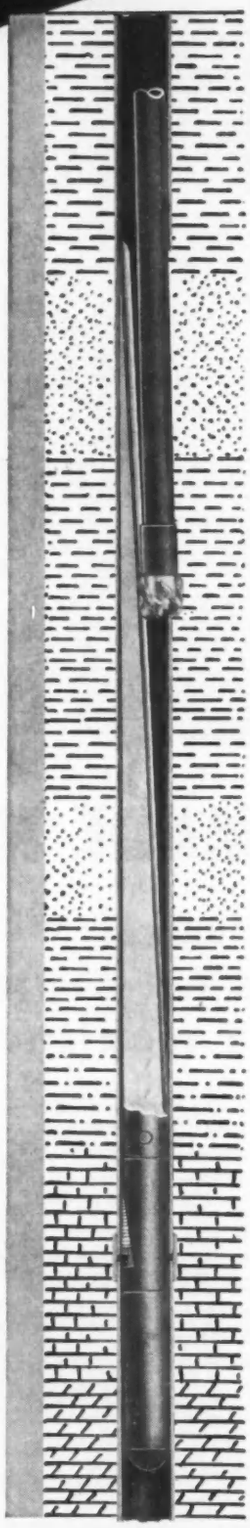
SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION



This "UA" attachment adapts conventional A.P.I. Tubing Heads so they may be used with any dual string and single string "U" Hangers. A saving can be realized because the attachments cost less than the Universal Tubing Head.

Export Representatives: South America — East West Oiltools, C. A., Del Lago Hotel, Maracaibo, Venezuela. Address Export Inquiries for All Other Countries to P. O. Box 3091, Houston, Texas.

NEW KINZBACH SPEEDMILLS *Slash* DOWN-HOLE CUTTING TIME



UTILIZING TUNGSTEN CARBIDE PARTICLES that continuously renew their cutting edges, new Kinzbach Speedmills offer you faster, surer milling under even rugged down-hole conditions. Because of their extreme hardness, they require fewer replacements . . . fewer round trips.

Kinzbach Speedmills require less torque for cutting . . . eliminate drill pipe wind-up . . . reduce shock on drilling string. They retain their high strength and hardness at elevated temperatures and are unaffected by heat generated by cutting action. Most important, the close control of speed and weight necessary in ordinary subsurface milling operations is not necessary with Kinzbach Speedmills.

For faster cutting . . . surer cutting, be sure your next milling job is done with Kinzbach Speedmills. Types available for every down-hole cutting problem.

Type 154 Speedmill

TYPE 154 SPEEDMILL
This mill is designed for attachment directly to a Kinzbach Type H Whipstock as the first tool in progressive milling operations. After the Whipstock is set, the attachment bolt is sheared and milling operations can begin. The lug on the face of the Whipstock engages the tapered pilot of this mill, forcing it to cut through the pipe wall without thinning the top section of the Whipstock. The Model 154 Speedmill is used to cut the first two and one-half feet of window only.

Type 155 Speedmill

TYPE 155 SPEEDMILL
After the first stage of window cutting is completed, the Kinzbach Model 155 Speedmill is run to complete the window. This tool is designed to utilize cutting force reactions so that maximum length of window may be cut, while side blades are designed to resist reduction in gage diameter during operation.

TYPES 156 AND 159 SPEEDMILLS
For general and milling operations. Used to mill up pipe or tools in the well and to shape the ends of obstructing materials for subsequent fishing operation.

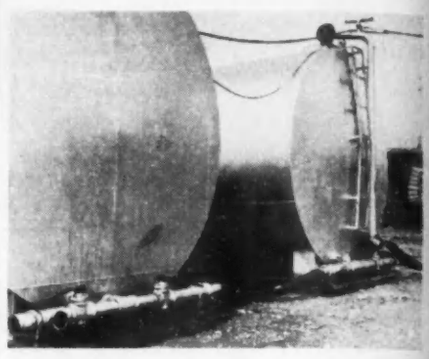
Type 159 Speedmill

Type 156 Speedmill

KINZBACH TOOL CO INC

Export Office:
74 Trinity Pl.
New York, N. Y.

KINZBACH TOOL CO., INC., P. O. BOX 277, HOUSTON, TEXAS



Shopmade Skids Provide Manifold for Water Tank

Water tanks built on skids provide a good base on which to build a manifold to control the flow of water to the rig. This manifold does away with the necessity of placing the tanks in the same relative position on the location each time, since the flow from the tank can be directed from either side.

The cylindrical tanks shown mounted horizontally on skid bases are used in series, and the water level will remain the same in each of the tanks. If the valve on the right side of the manifold on the left tank is open, both tanks can be used without making any changes in the connections shown here. Please note that there is only one fill-up line used for both tanks. The manifold for each tank is standardized. Each manifold is made up with two valves, two tees, six short pieces of pipe, one coupling and a hammer up union with scrap plate bracing on each end.

A rubber hose long enough to reach between the tanks when they are spotted side by side and a bull plug are the final pieces of equipment necessary for the construction. The tee in the left side of the manifold must be placed so that the outlet is facing away from the tank in order for it to be readily usable.

When this opening is not being used it may have to be bull-plugged if water is being taken from the left side of the tanks. This manifold installation is permanent. It can be moved as a unit with the tanks and save much of the rigging up time ordinarily used for this type installation.

keep 'em turning
to the right . . .

with quality engineered

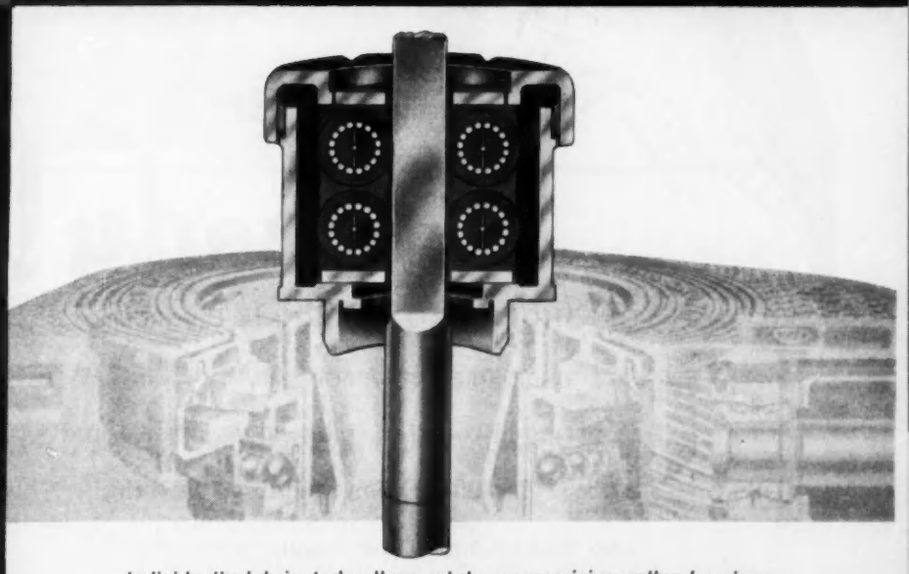
BAASH-ROSS ROLLER KELLY DRIVE BUSHINGS

Precision engineered and ruggedly constructed, Baash-Ross roller kelly drive bushings always operate smoothly and efficiently under extremes of torque and rotary speeds.

Key feature of this bushing is the assembly of tandem rollers—in both square and hexagonal models—with eight or twelve large diameter rollers, with non-friction bearings, in constant positive contact with the kelly faces. Kelly wobble is prevented and stability is assured.

Since the rollers always provide smooth, friction-free feeding, weight indications are accurate; damaging impacts to drill string and other equipment can be avoided.

Superior performance has made Baash-Ross kelly drive bushings preferred in the industry. For additional information write to P. O. Box 1348, Houston 1, Texas, or see the Composite Catalog.



Individually lubricated rollers rotate on precision roller bearings.

BAASH-ROSS TOOL COMPANY

DIVISION OF JOY MANUFACTURING COMPANY

GENERAL OFFICES: 5306 CLINTON DR., HOUSTON, TEXAS

AREA OFFICES:

Houston, Texas; Odessa, Texas; Dallas, Texas; Long Beach, Calif.; Denver, Colo.; Oklahoma City, Okla.; Olney, Ill.; Mexico City, Mexico; Edmonton, Alberta, Canada.

FOREIGN OFFICES:

New York, N. Y.; Greenock, Scotland; London, England; Paris, France; Maracaibo, Venezuela; Buenos Aires, Argentina.

Fill Emergency Needs On Remote Drill Sites

The money invested in several hundred feet of semi-rigid two-inch plastic pipe cut up into several lengths for easy handling by one or two men, easily can save its cost several times over. This was the finding of one contractor who regularly carries several lengths of the material with each rig, particularly those which may encounter road or supply problems in remote or hard-to-reach spots.

Numerous uses are found for it, such as pumping water from a nearby creek or pond instead of employing a tank truck; handling fuel oil when mud or bad weather prevents trucks from getting up close to the rig fuel tanks; and any job that requires laying a temporary line in the shortest time possible. Equipped with standard two-inch fittings and unions, the pipe sections can be quickly uncoiled, strung out and as easily re-coiled for storage.

WHEN YOU NEED IT . . .

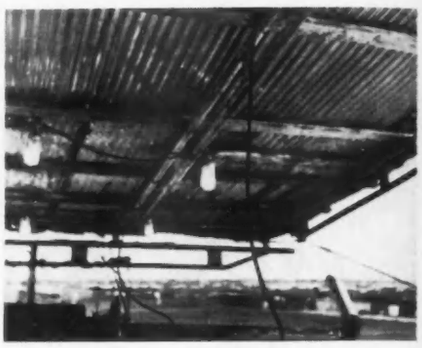
Ready!

OFFSHORE OR INSHORE, in the industry's largest or smallest operations, the Whitney is prepared to offer financial assistance and counsel in exploration, drilling, refining and marketing of petroleum products.

Whitney

NATIONAL BANK OF NEW ORLEANS
Established 1883 Member F. D. I. C.

1883 WHITNEY 75th YEAR 1958



Economize While Providing Spark Arrestor Water

Most of the rigs in operation today use spark arrestors as an added safety feature. It also helps to reduce the noise of the power units.

The arrestors necessitate water being delivered to each engine exhaust. This usually means that water is piped up to the engine platform and across the platform to the engine. One operator saved pipe and space by using the two-inch pipe in the engine platform roof frame to move his water. The pipe used in the frames are used as a manifold water line to supply all spark arrestors on the engine exhausts. The water is pumped through to the pipe and through a rubber hose to spark arrestors at the exhaust of each engine.

As many engines as necessary can be connected to this manifold line. This enables the operator to use this pipe for a dual purpose and save the cost of additional piping that would otherwise be needed.

The rubber hose connections are very easily disconnected and made ready for transport which also is a saving. The efficiency of the beam is not impaired since the weight of the water that is carried is not sufficient to add any stress to the beam, and the pressure is very low. This type hook-up is also helpful in that it reduces the amount of pipe that has to be moved when the rig is torn down.

PROMPT SERVICE!

HOMCO'S reputation is built on it!

The ever increasing demands of the petroleum industry require promptness and alertness.

Supply stores must be located near the base of operations, stocks must be adequate and service **must** be the motto.

HOMCO is a part of the American Competitive System offering its facilities, day or night, anywhere, anytime. When you think of supplies, think of HOMCO.

THE WORLD'S LARGEST INDEPENDENT OILFIELD SUPPLY AND SERVICE ORGANIZATION

DIRECTIONAL DRILLING • FISHING AND CUTTING • OILFIELD SUPPLIES • ELECTRICAL WELL SERVICE

HOMCO

HOUSTON OIL FIELD MATERIAL COMPANY, Inc.

HOUSTON, TEXAS

RESEARCH • ENGINEERING
DEVELOPING • MANUFACTURING

HOMCO Expert Offices

Houston Oil Field Material Company, Inc.
509 Madison Avenue
New York City, New York

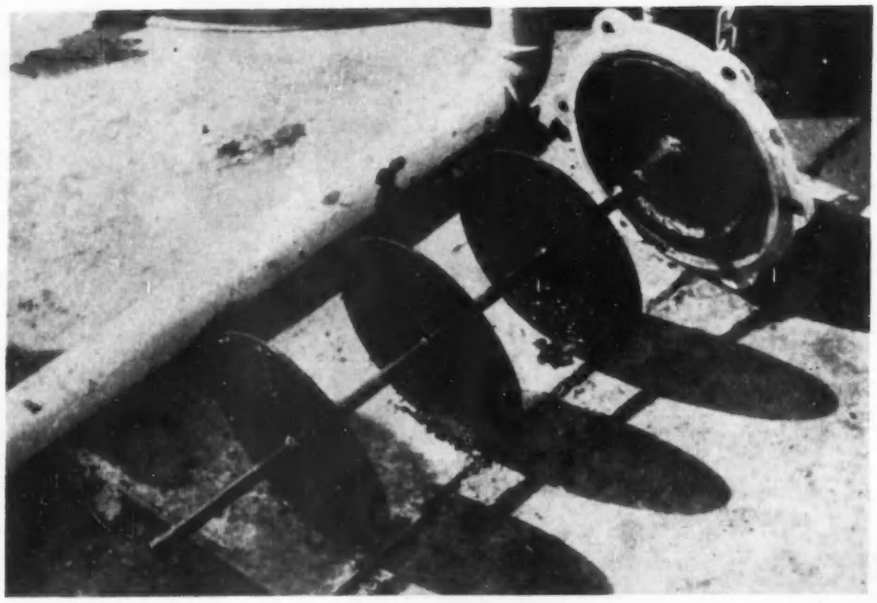
HOMCO de Mexico, S. A.
Paseo de la Reforma #76, desp. 503
Mexico 6, D. F.

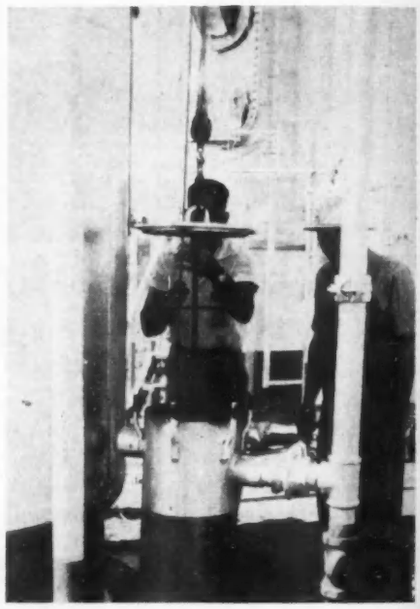
For more data on advertised products, use Readers' Service Cards, last page.

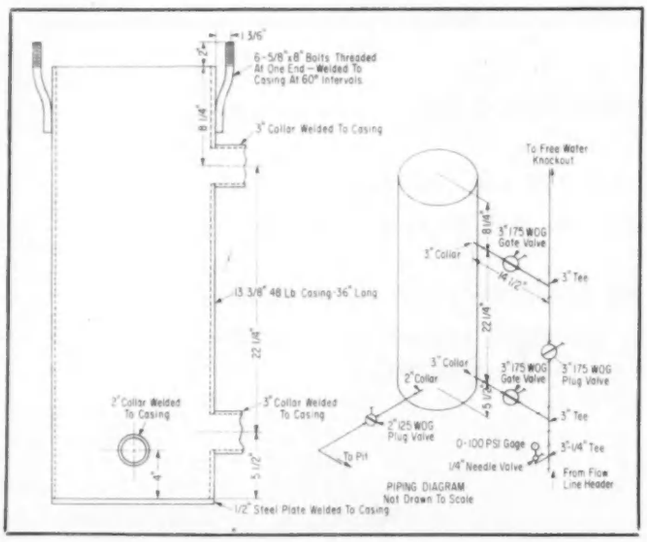
PRODUCTION HINTS

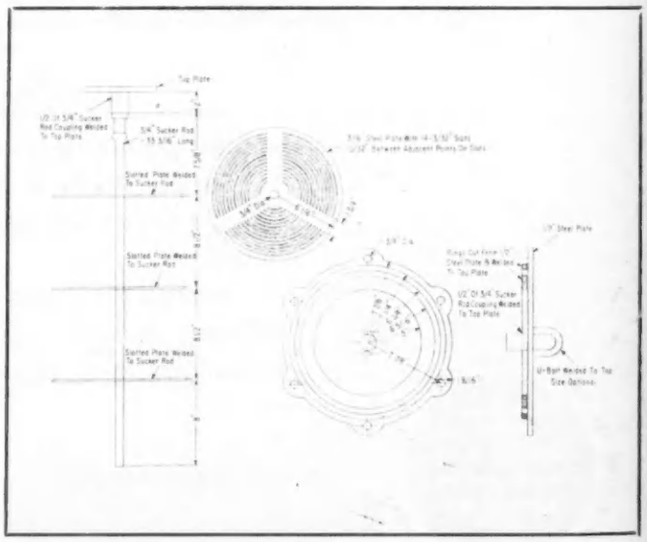
These How-To-Do-It Ideas Can Save You Money

$10 is paid for each illustrated acceptable contribution. Mail to The Editor, WORLD OIL, P. O. Box 2608, Houston 1, Texas.



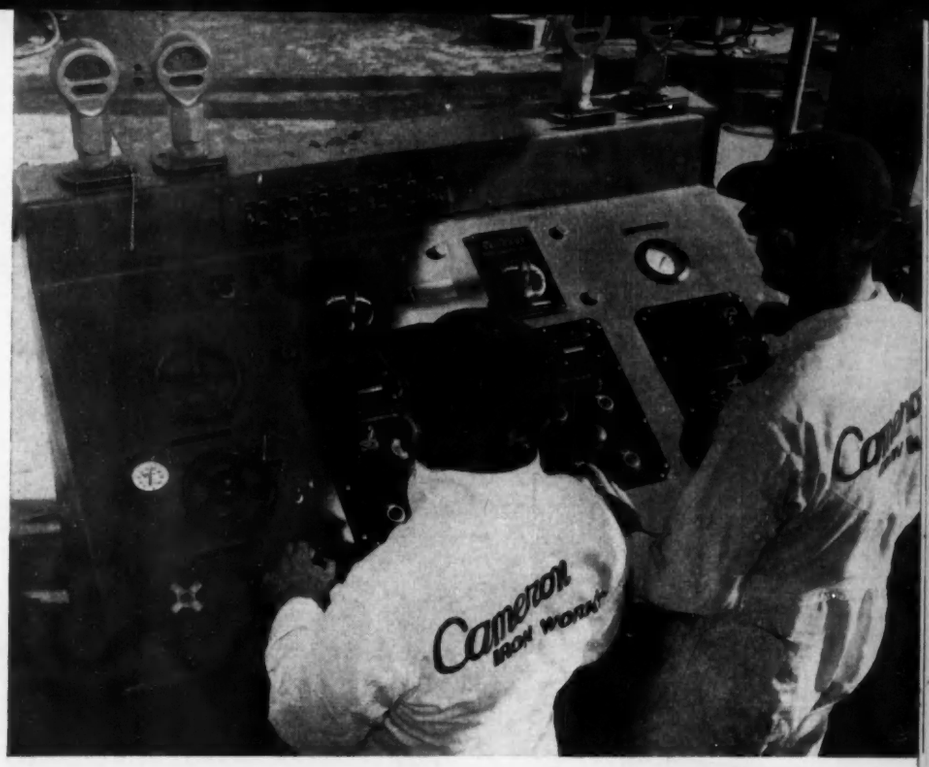



6-5/8"x8" Bolts Threaded At One End—Welded To Casing At 60° Intervals
3" Collar Welded To Casing
To Free Water Knockout
3" 175 WOG Gate Valve
3" Collar
3" Tee
13 3/8" 48 Lb Casing-36" Long
3" Collar
3" 175 WOG Gate Valve
3" 175 WOG Plug Valve
2" Collar
2" Collar Welded To Casing
3" Collar Welded To Casing
2" 125 WOG Plug Valve
3" Tee
0-100 PSI Gage
3"-1/4" Tee
To Pit
1/4" Needle Valve
From Flow Line Header
PIPING DIAGRAM Not Drawn To Scale
1/2" Steel Plate Welded To Casing



Scale Trap Minimizes Fouling of Free Water Knock-Out

One company has minimized the fouling of automatic valves due to scale and debris formation in the free water knock-out installation by installing a scale trap between the flow line header and the free water knock-out. Prior to installation of the trap, constant fouling of free water knock-out equipment resulted in a loss of



TEST, TEST AND RETEST

Tests are the proof of performance in a new product and the key to improvement in existing designs. This is why we have always considered test facilities to be an integral, working part of our design development program. But tests to be effective must not only simulate working conditions, they must also produce extremes for the study of equipment in unusual circumstances. In our test areas, actual oilfield conditions are stepped up beyond normal working limits to prove a point in design. Presently we are testing seven inch preventers for working pressures of 15,000 psi and ten inch preventers for 10,000 psi. Extremes in pressure, temperature and various phases of mechanical stress give the direction for designs to more than meet tomorrow's demands in any oil producing area. Innumerable tests of this type are part of Cameron's continuing design development program. Just such dedication to advancement has

made Cameron the world leader in pressure controls for drilling and production. This is why, if oil is your interest, you can COUNT ON CAMERON for the most reliable, most economical protection in any producing area.

Cameron

IRON WORKS, Inc.
P. O. Box 1212-Houston, Texas

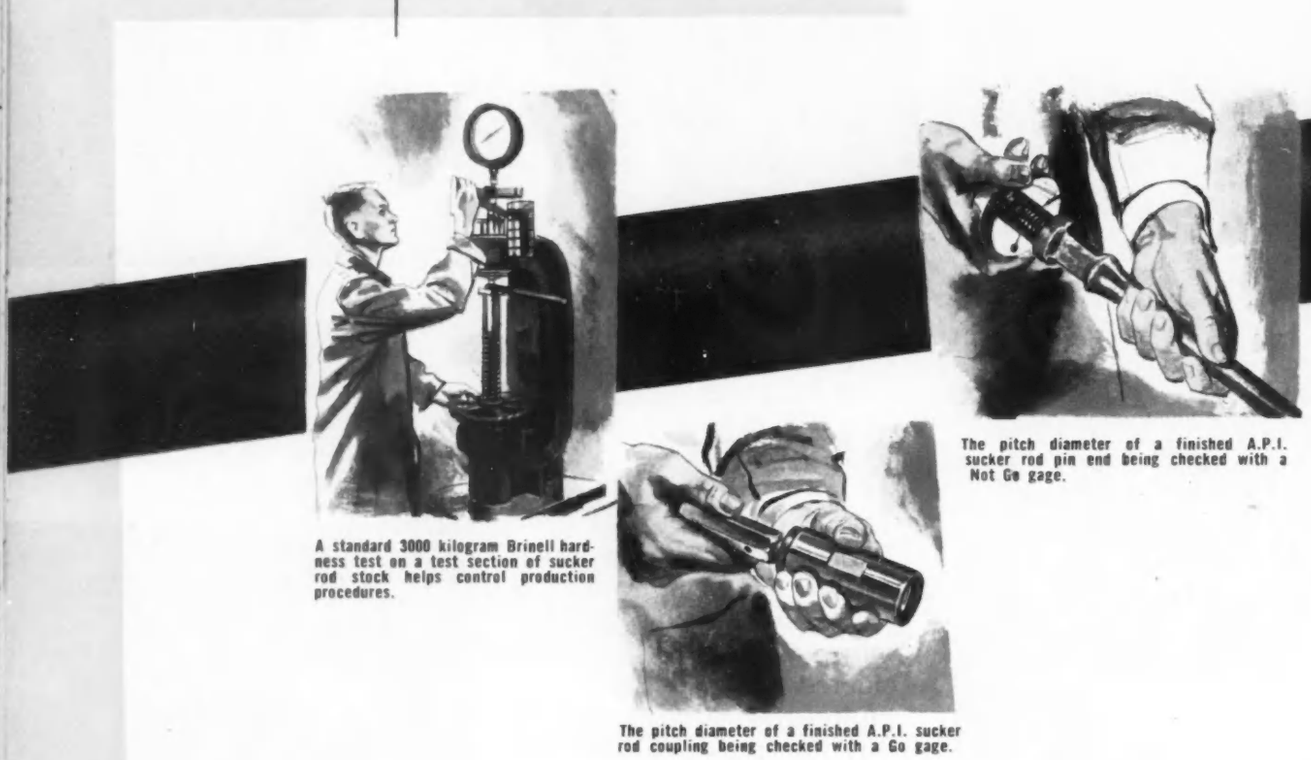
Export Office: 7912 Empire State Bldg., New York City. In England: Cameron Iron Works Ltd., Time & Life Bldg., New Bond Street, London W. 1, England

No. 5 advertisement of six proving . . .

why Jones sucker rods last longer

1. *Advanced Research and Development*
2. *Advanced Engineering Experimentation and Control*
3. *Advanced Metallurgy and Heat Treating*
4. *Advanced Manufacturing and Production*
5. ✔ *Advanced Inspection and Testing Techniques*
6. *Advanced Field Engineering and Service*

There is a



A standard 3000 kilogram Brinell hardness test on a test section of sucker rod stock helps control production procedures.

The pitch diameter of a finished A.P.I. sucker rod pin end being checked with a Not Go gage.

The pitch diameter of a finished A.P.I. sucker rod coupling being checked with a Go gage.

The S. M. Jones Company ADVANCED INSPECTION and TESTING TECHNIQUES

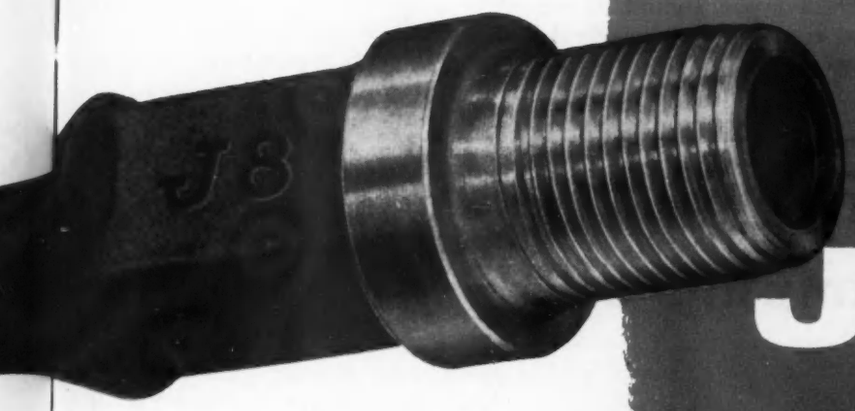
Jones inspection department has the directive and backing of Jones management to reject without question any raw material or finished product that does not meet Jones exacting specifications.

This policy is rigidly enforced by a management broad enough to see that a little extra profit today is bad business if it means that a customer will get even one sucker rod that is not fully up to Jones standards in every way.

Every steel must be right. Every chemical and every physical property must be well within the high standards set by Jones. There must be perfect longitudinal alignment of the thread axis with the axis of the rod. The tolerances and surface condition of the threads must stand Jones rigid requirements. Every coupling and pin shoulder face must be exactly at right angles to the thread axis.

Jones high quality standards will be maintained as they have been for over 65 years of Jones specialization in making sucker rods.

a difference in sucker rods.



TYPE 8

JONES

alloy

SUCKER RODS

For extremely heavy pumping loads.

This rod is the result of long research and field use to produce the very best rod for exceedingly heavy pumping. It is made of special alloy steel of exceptional yield strength and well-balanced physical properties.

Specify Jones Sucker Rods for *proved* longer life.

FOUR TYPES OF JONES SUCKER RODS FROM WHICH TO CHOOSE

Type	Identification	USE	DESCRIPTION	PHYSICAL PROPERTIES					
				Yield 1000 psi	Ultimate 1000 psi	% Elong. in 8"	% Red. of Area	Izod	Brinell Hardness
J-12	Protector ends painted BLUE	For heavy pumping loads under all conditions	Made from processed electric furnace steel with high yield strength and excellent fatigue resistance.	95-105	110-125	12-17	65-75	90-110	229-260
J-8	Protector ends painted BLACK	For extremely heavy pumping loads	A special alloy steel of exceptional yield strength and well-balanced physical properties.	100-115	120-135	10-15	50-60	85-85	240-280
J-7	Protector ends painted ORANGE	For medium to heavy pumping loads under all conditions	Called "standard of the industry". Strong, corrosion resistant nickle molybdenum steel, fully normalized, tempered, descaled and shot peened for further fatigue and corrosion resistance.	65-80	85-100	14-22	60-70	90-107	170-210
J-2	Protector ends painted WHITE	For medium to heavy pumping loads in non-corrosive fluids	High grade carbon manganese steel, fully normalized, descaled and shot peened to add strength and endurance.	60-75	90-105	18-24	60-70	60-80	180-210

Jones Pony Rods carry the same physicals as Jones Sucker Rods. Always use proved superior Jones Pony Rods with proved superior Jones Sucker Rods.

THE S. M. JONES COMPANY

●

Division of Buffalo-Eclipse Corporation

General Office and Factory:
TOLEDO, OHIO
Sales Office: Enterprise Building,
TULSA, OKLAHOMA
Export Sales Representatives:
IDECO, One of the Dresser Industries,
Republic National Bank Building,
Dallas, Texas, and
Chanin Building, New York City

4878

production due to necessitated repairs caused by scale and debris formation in this equipment.

The trap, 36 inches in height, is installed in the flow system as shown in the illustrations. The center portion of the trap, made up of three cylindrical slotted plates welded to a vertical ¾-inch sucker rod, collects the debris and scale contained in the fluid from the flow line header to the free water knock-out. Each cylindrical 3/16-inch steel plate disc is cut to form fourteen 3/32-inch slots.

In normal operation all production flows through the trap from bottom to top, as shown in the piping diagram. The installation was set up off a three-inch flow line with gate valves installed into the line entering the trap, trap output line and the main flow line as a bypass control. If the differential reaches approximately six pounds per square inch between the inlet pressure gage and the operating pressure of the free water knock-out, indicating a clogged condition on the cylindrical discs, the scale trap should be back washed to the pit. The inlet position is reversed by closing the three-inch plug valve in the main line, the three-inch gate valve in the inlet line and opening the two-inch plug valve in drain line to the pit. This arrangement reverses the fluid flow so that the cartridge is cleaned by the back-washing operation.

Occasionally it may be necessary to lift the top plate and cartridge by removing the nuts on bolts welded to the trap exterior in order to clean the cartridge manually. This will be necessary when the differential pressure is not materially reduced by backwashing. A U-bolt welded to the top of the cartridge's top plate serves a very useful purpose when it is necessary to remove the cartridge manually. As shown in the picture, a chain hooked onto a block and tackle makes this job a very simple and labor saving chore.

Looking over our shoulder at 39 years of pumping oil!

We could bore you stiff with pages and pages of facts and figures, production costs, engineering data . . . but we're not! Because we believe that you don't really give a hoot how or what a JENSEN's made of. You're interested in only one thing . . .

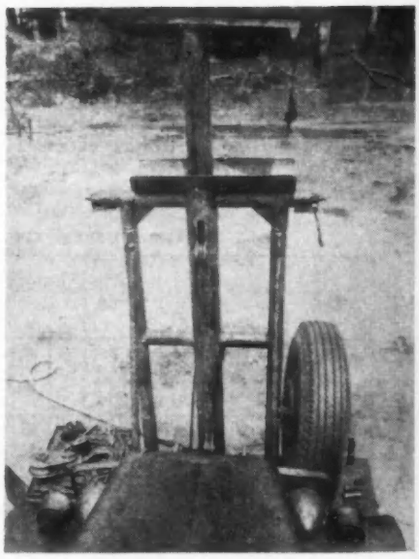
PUMPING MORE OIL MORE PROFITABLY!

A JENSEN will do it! A statement backed up with 39 YEARS OF PROVEN PERFORMANCE. We don't expect you to believe it—but we welcome the opportunity of proving it to you!

STOCKED BY YOUR LOCAL SUPPLY STORE

Made by JENSEN BROS. MFG. CO., INC., P. O. Box 477-D, Coffeyville, Kan.
Export Office: 60 East 42nd St., New York City, U. S. A.

JENSEN JACKS



Equip Pulling Unit Support With Power-Operated Hoist

A heavy mast carried over the cab of a pulling unit truck is normally difficult to raise into position by use of the pulling winch on the unit alone. One company has facilitated ease of operation in raising the mast by installing a power operated hoist on the mast support in the front of the unit.

When the winch on the front of

In every area

SERVED BY A WILSON SUPPLY STORE THE TOOL PUSHERS WILL TELL YOU ABOUT . . .

WILSON SUPPLY

Service

. . . . . there's none better

"WHAT YOU WANT—WHEN YOU WANT IT"

MAIN OFFICE and WAREHOUSE—1301 CONTI ST.

BRANCH STORES

TEXAS: Alice, Corpus Christi, Victoria, San Antonio, McAllen, Bay City, Columbus, Barbers Hill, Liberty, Beaumont, Kilgore, Odessa. LOUISIANA: Lake Charles, New Iberia, Houma, Harvey, Shreveport. NEW MEXICO: Hobbs.

SALES OFFICES

DALLAS	SHREVEPORT	SAN ANTONIO
TULSA	NEW ORLEANS	LAKE CHARLES
MIDLAND	LAFAYETTE	CORPUS CHRISTI

WILSON SUPPLY CO

HOUSTON, TEXAS

the truck is put in gear, the cable raises the support hoist several feet. This raises the mast beyond dead center and allows some leverage on the raising lines.

The mast support on the front of the unit is built with a four-inch vertical main support column that is welded to the two-inch scrap pipe framework, as shown in the picture. A 3½-inch pipe travels vertically inside the four-inch support when serving as the hoist. A short section of 3¼-inch is split and welded to the top of the 3½-inch hoist member.

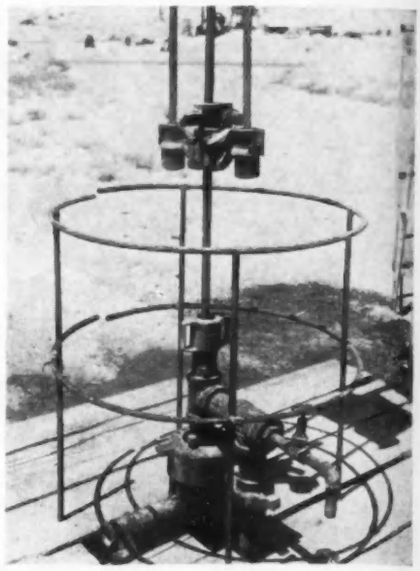
A split section of four-inch is welded to the top of the four-inch center support so that when the mast is in lowered position, the horizontal 3½-inch is split and welded to the the split four-inch section of pipe. The winch line on the front of the truck is tied into the lower end of the inside pipe riser. This line is then strung over a sheave, welded to the four-inch member, and then to the drum of the winch.

After the pulling unit is moved onto location and spotted in position beside the hole, the operator places the front-end winch in gear. The mast can be raised several feet with the front hoist and swung up with the pulling winch on the unit.

Make Removable Guard For Pump Unit Wellhead

Many different varieties of pumping unit guards can be observed in the field. Some are elaborate and expensive to build; others are extremely simple, yet do essentially the same protective job but require less time to build and are more easily handled in the field.

The removable guard pictured is simple, inexpensive and can be made any diameter in size desirable to suit the particular requirements of the wellhead. The guard should be made from sucker rod material or material of sufficient weight to resist "wandering" induced by vibration or accidental bumping. One advantage of this type guard lies in the fact that any number of identical units can be shop-constructed for use on practically any well installation.



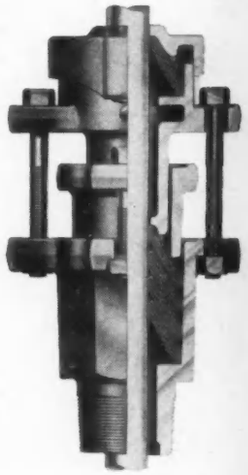
The unit consists of two circles, with ends not welded together but nearly touching, which are welded to four sucker rod legs. Merely by spreading the circles apart a few inches, the unit can be placed around any tubing head to guard workmen against being struck by the descending hanger bar or horsehead.

Dependable
HERCULES STUFFING BOXES end Your pumping worries*

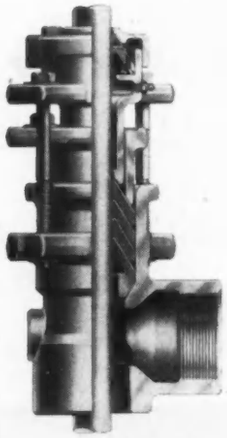
HERCULES Duplex Polished Rod Stuffing Boxes are constructed from high grade malleable iron (55,000 PSI Tensile Strength) and are rated 3,000 pound test. Flexibility and the cone-shaped Packing Rings are the combination of factors which make the HERCULES Stuffing Box without equal for any pumping situation.

HERCULES OIL RESERVOIR UPPER GLAND
*Any HERCULES Stuffing Boxes may be equipped with Oil Reservoir Upper Glands on "problem" wells which pump-off and burn packing. The polished rod moves through the oil in the reservoir which lubricates and cools it.

"REGULAR TYPE" DUPLEX POLISHED ROD STUFFING BOX
The old reliable; tried and proved on thousands of wells from coast to coast and in many foreign fields.



"TEE TYPE" DUPLEX POLISHED ROD STUFFING BOX
HERCULES "TEE TYPE" Stuffing Box is very compact, only 15" high. It is full opening which allows rods to be run or pulled without removing Stuffing Box body. It is furnished in 2", 2½" and 3" sizes with any API Tubing or Line Pipe Thread.



"TYPE DP" DUPLEX POLISHED ROD STUFFING BOX
A double packed Stuffing Box for use on high pressure wells and those that flow intermittently. Especially desirable for wells located near buildings, fire hazards or growing crops. Two compression bolts, in bottom sections, are tightened on lower packing set while replacing packing in upper section. Possess same flexibility as the regular and Tee base type.

HERCULES TOOL Company
"MANUFACTURERS OF OIL FIELD EQUIPMENT SINCE 1924"
GENERAL OFFICES AND PLANT TULSA, OKLAHOMA
Export Representative: Oil Field Equipment Co., Inc., 30 Church Street, New York 7, N. Y.

What's Happening among MEN in the INDUSTRY

T. C. Barger, the **Arabian American Oil Company's** representative to the Saudi Arab government, has been elected a vice president of the company and assistant to the president. Barger joined Aramco as a geologist in 1937. He transferred to the company's Government Relations department four years later. Prior to joining Aramco, Barger worked in Canada for Lake Shore Mines Ltd., and later with Bear Exploration and Radium Ltd. His headquarters will continue to be in Dhahran, Saudi Arabia.

T. C. Barger

•

Camdrill International, Inc., has transferred **George E. (Ed) Porter** to Tripoli, Libya, as assistant to **Scott A. Murray**, manager of Mid-East and Mediterranean operations. Porter spent 1955 and 1956 in Cairo, Egypt, for Southern California Petroleum Corporation and Camdrill International, Inc. During the year 1957 Porter has been assistant to **R. O. Turner**, vice president of Camdrill International, Inc., in the Compton, Calif., office.

Larry D. Cannon has joined Camdrill International, and taken over the activities formerly assigned to Porter. He is now located in the company's new office in Los Angeles. Cannon spent the last nine years as production and drilling engineer with Drilling and Exploration Company, Inc. Cannon's experience and background in foreign operations are similar to his new duties with Camdrill and Camay Drilling Company.

•

The Carter Oil Company made the following organizational changes in the Production department. **James A. Kelley**, district superintendent at Seminole, Okla, is appointed assistant division production manager of the Western division with headquarters at Denver. **John L. Dailey, Jr.**, assistant district superintendent at St. Elmo, Ill., is to replace Kelley as district superintendent of the Seminole district. **Joe H. Norman**, district engineer at St. Elmo is to replace Dailey as assistant district superintendent of the St. Elmo district. **Danny E. Shupp**, senior engineer at St. Elmo, is to replace Norman as district engineer of the St. Elmo district. **Thomas R. Smith**, senior engineer at Carmi, Ill., is to replace **Weldon C. Butler** as district engineer of the Great Bend district at Great Bend, Kansas. Butler has resigned to accept an engineering assignment with Aramco in New York City.

Art L. Walker, Jr., has reentered consulting after three years with the Oklahoma State Oil and Gas Conservation Department. He is prepared to do oil and gas consulting work.

•

Lee A. Keeling and **W. T. Ford** have opened offices in Tulsa's Philtower building to serve as consulting petroleum engineers under the company name of **Keeling and Ford.** Both Keeling and Ford formerly were with the Keplinger and Wanenmacher company, Tulsa petroleum engineering consultants. Keeling previously worked for Wright Petroleum laboratories and Magnolia Petroleum Co. Ford formerly was with Carter Oil Co. and Deep Rock Oil Corp.

•

Edward A. Wendlandt, chief geologist for **Humble Oil & Refining Company**, retired from the company recently. **William E. Dougherty**, assistant chief geologist since June, 1956, became chief geologist. Wendlandt has been chief geologist since 1955. He joined the company in 1924. Dougherty joined Humble in 1936 as a geologist at Midland, Texas. He was promoted to assistant West Texas division geologist at Midland in 1941. Dougherty remained at Midland until 1948, when he was transferred to Corpus Christi as assistant division geologist for southwest Texas. Later that year, he became division geologist in that area. In 1952 he moved back to Midland as division geologist, remaining there until his move to Houston in 1956 to become assistant chief geologist.

W. A. Dougherty

•

Pan American Petroleum Corporation has announced three supervisory appointments in its General office Producing department in Tulsa. **D. W. Farnham** is the new operating superintendent for foreign operations; **J. D. Wells** becomes assistant to the chief engineer; and **G. F. Moore** is assistant sales superintendent. All three men, former Tulsa residents, have recently completed assignments with Amoco Chemicals Corp. at Brownsville, Texas. All are former Pan American employes who had been with Amoco since early this year, when Amoco took over Pan American's chemical plant operation at Brownsville.

•

B. B. Jennings

F. W. Bartlett

B. Brewster Jennings, chairman of the board of directors of **Socony Mobil Oil Company, Inc.** and chief executive officer of the company, announced his retirement. **Albert L. Nickerson**, president of Socony Mobil since 1955, will become chief executive officer of the company. **Fred W. Bartlett** will succeed Jennings as chairman of the board of directors. Bartlett has been a director since 1953 and vice president for producing since May, 1957. Jennings, who has been chief executive officer of Socony Mobil for more than 13 of his 37 years with the company, became president of Socony Mobil in 1944 and chairman of the board of directors in 1955.

A. L. Nickerson

•

Gerald W. Flowers, a pumper in the Barber's Hill area, Texas, received the J. Howard Pew Award for his "act of heroism beyond the call of duty." The 130-pound **Sun Oil Company** employe dragged two men—one weighing twice his own weight—from certain death inside a crude oil storage tank. **John G. Pew**, Sun's vice president in charge of production, made the presentation at the company's offices in Dallas recently.

•

The British American Oil Company Limited has announced the appointment of **E. D. Loughney** and **D. L. Campbell**, both former vice presidents, to the newly-created positions of senior vice presidents of the company. Loughney was appointed a vice president and elected a director of B-A following the acquisition of Canadian Gulf Oil by British American in 1956. His career in the oil industry began nearly 30 years ago, and for many years he has been associated in major executive posts with the oil and natural gas developments in Western Canada. Loughney is

for **leakproof, pressure-tight connections**

use **TiteSeal®**

SEALING COMPOUNDS

Heat and vibration-proof, non-solvent, will not shrink, crack or crumble. Makes all assemblies leak-proof and pressure-tight. Prevents rust, corrosion, joint seizure.

7 BASIC BLENDS

LIQUID WRENCH®

The super-penetrating rust solvent

LOOSENS

rusted bolts, nuts, screws, 'frozen' parts

Liquid Wrench works *fast*...yet is absolutely safe for all metals and alloys.

2171

At Industrial, Automotive, Hardware, Plumbing Jobbers

SOLDER SEAL

RADIATOR SPECIALTY CO.

Charlotte, North Carolina

also a director of several pipe line companies, including Trans Mountain, Interprovincial, Trans Canada, Trans-Northern, Westspur, Montreal and Portland. Campbell joined B-A as an engineer and successively filled several important posts in the manufacturing department at refineries and head office. In 1948 he became manager of manufacturing and in 1954 was appointed vice president. Campbell was elected a director of B-A in 1956. He is also a director of Trans-Northern Pipe Line Company and B.A.-Shawinigan Limited.

•

John W. Gendron has been advanced to the new post of administrative assistant to the president of **Tidewater Oil Company.** Gendron was formerly manager of Tidewater's Oil Purchase and Exchange department. He is a director and vice president of Tide Water-Iran, Ltd., and a director and vice president of Iricon Agency, Ltd., of which he was president in 1956-57.

John W. Gendron

•

Ruth Bachrach has been promoted to assistant to the regional geologist for **Continental Oil Company's** Rocky Mountain region. She will continue to make her headquarters in Denver. During the past nine years, she has served as a staff geologist in Conoco's Denver regional office and has been deeply involved in unit participating area problems and exploitation and exploration geology. Before joining Conoco in 1949, she was an instructor in geology at Knox College for three years.

•

Charles V. Mahaffey was appointed district geologist at Roswell, N. M., for **Cities Service Oil Co.** Mahaffey succeeds **M. F. Kennedy,** who has taken a foreign assignment with another Cities Service company. Mahaffey was serving as staff exploration geologist at the company's Midland, Texas, division office. He was employed in 1948.

•

Virgil E. Spradlin, manager of the Mid-Continent office of Mayfair Minerals, Inc., has resigned to become a consultant in geological work. His new address is 522 Union Center building, Wichita, Kansas.

•

A. E. Barroll, former production superintendent of Mobil Oil Canada, Ltd., will go to Paris, France, as manager of exploitation for **Mobil Oil Francaise. G. Wendell Smith,** former exploration representative in Switzerland for Mobil Overseas Cil Co. is manager of exploration for Mobil Oil Francaise. **Forrest E. Wimbish** has been promoted from exploration man-

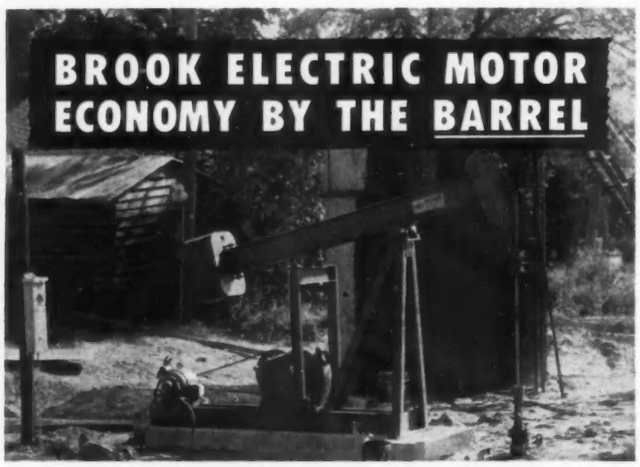
PERFORATE TUBING IN THE WELL

KINLEY TUBING PERFORATOR

M. M. Kinley Company
Licensees

ABILENE, TEXAS
Hudson-Eads, Inc. 2-5331
BAY CITY, TEXAS
J. P. Graham..... CI 5-4526
BEAUMONT, TEXAS
Assoc. Eng. & Eqpt., Inc.....TE 5-7046, ZF 8-2023
CASPER, WYOMING—C. A. White..... 3-5264
FORT MORGAN, COLORADO—C. A. White..... 819
GLENDIVE, MONTANA—C. A. White...EM 5-3833
HOBBS, NEW MEXICO
Horne Well Service Co..... 3-5396
HOUMA, LOUISIANA—Cameo, Inc..... 7330
HOUSTON, TEXAS
Assoc. Eng. & Eqpt., Inc..... CA 5-1103
KILGORE, TEXAS—B. M. Davis..... 5541
LAFAYETTE, LOUISIANA
Assoc. Eng. & Eqpt., Inc..... CE 5-0770
Cameo, Inc..... CE 5-3124
LIBERAL, KANSAS
Rainbo Service ..... Main 4-3598
MIDLAND, TEXAS
Lucceus Service & Eqpt. Co..... MU 2-1631
NEW ORLEANS, LOUISIANA
Assoc. Eng. & Eqpt., Inc..... VE 5-4983
OKLAHOMA CITY, OKLAHOMA
Rainbo Service Co.....ME 4-2131, ME 2-3045
PETTUS, TEXAS
Eddie Jones Eng. Co., Pettus 16; Beeville, FL 8-1216
SHREVEPORT, LOUISIANA
Cameo, Inc. 8-3615
VICTORIA, TEXAS—Cameo, Inc.....HI 3-9521
WHITTIER, CALIFORNIA
Kline Wire Line Co..... OX 3-2781
WICHITA FALLS, TEXAS
Hudson-Eads, Inc. 2-3767, 2-8584, 3-4690

BROOK ELECTRIC MOTOR ECONOMY BY THE BARREL



THE less it costs to pump crude the more you make per barrel. Brook A.C. Motors cost less initially and assure maximum service life and overall economy. There is no finer motor built. 1 to 600 H.P. They're powering pumping units from Arabia to Wyoming, stacking up performance records that bring users back again and again for more BROOK MOTORS. Unit shown is a special outdoor pumping service 5 H.P., 1200 R.P.M. Single Phase Motor operating in Texas. Also special drilling motors with three different horsepowers incorporated in one frame. Brook Sales and Service in all producing areas. Send for literature.

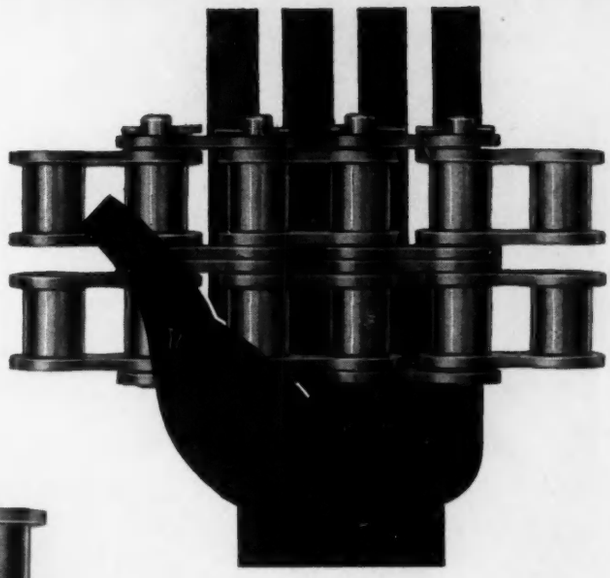
SINCE 1904

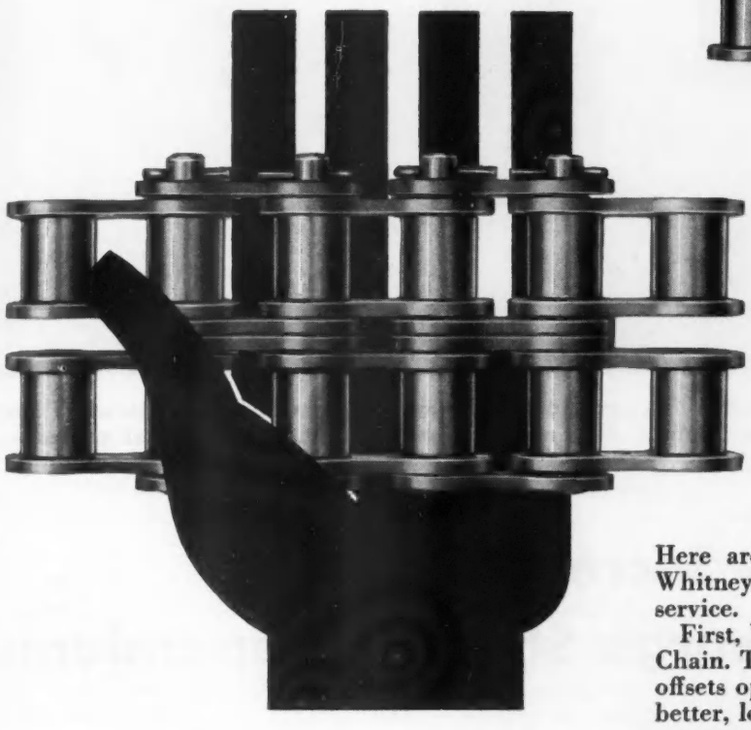
world's most respected motor

BROOK MOTOR CORPORATION

3553 W. PETERSON AVE, CHICAGO 45, ILL.

BROOK MOTOR CORPORATION





WHAT'S DIFFERENT?

Here are the new, significant advances that put Whitney Chain far ahead for endurance in oil field service.

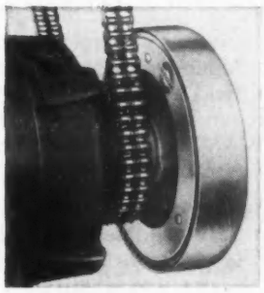
First, Whitney *fatigue-resistant* Processed Roller Chain. This new development in heavy duty chain offsets operational stresses in the chain . . . assures better, longer service under heavy shock loads and severest operating conditions.

Then there's Whitney's "Fluid-Fit" design . . . features all-cottered chain construction with slip-fit link assembly. "Fluid-Fit" eliminates tough, time-wasting repair work when altering or replacing chains.

And if space limitations or weight are serious considerations in power transmission, Whitney's new, High Capacity Roller Chain may provide an effective solution to your problem.

Our factory trained Field Engineers will gladly supply you with complete details on these cost-cutting design advances. Consult them for practical recommendations on all of your chain drive problems.

For service from any standpoint, call Whitney's Oil Country Warehouses in Dallas, Texas and Los Angeles, California . . . get "off-the-shelf" service on the complete line of ASA roller chains from oil field supply stores in every producing area.



Heard About Whitney-Tormag Magnetic Drives?

For complete motor overload protection, cushioned starts and high efficiency, ask about our new permanent magnet, self-contained power tranfer unit. Available in 1 and 2 H.P. units as stock items, additional sizes up to 15 H.P. will follow.

Write for literature.

Whitney

CHAIN COMPANY

324A Hamilton St., Hartford 2, Conn.

ROLLER CHAIN • CONVEYOR CHAIN • SPROCKETS • FLEXIBLE COUPLINGS • WHITNEY-TORMAG DRIVES

In the Field—Salesman "Riney" Rinehart (right) gains firsthand knowledge of drilling. Driller Earnest Mann points out excellent wear received from Pittsburgh Drill Pipe and Tool Joints. "Riney's" field work means . . .

Good Service Is the Secret of Success for Pittsburgh Steel's Independents

Back in Indiana some 58 years ago, his parents named him Wallace Chester Rinehart. Since then, 35 years in Oklahoma and Texas oil fields have trimmed his name to just "Riney."

That's how he's known to thousands of oilmen in the fields of North Central Texas where he manages one of the largest independent oil field supply stores.

A Texan for nearly 30 years, Riney has spent the last 14 as store manager of a Pittsburgh Steel Company independent distributor.

He knows oilmen, their needs and the merits of the products he sells. Proof of this is found on a plaque displayed in his office. It cites Riney for "outstanding service" to the supply end of the oil business.

Being with Riney any length of time quickly convinces one that these words from the plaque—"outstanding service"—are really his key to success.

More than for Riney alone, these words also sum up the reasons behind success of the entire 65-member organization he is with.

For, if other companies started on a shoestring, Riney's outfit started on half a shoestring. Its first store was a two-story frame building that once had been a freight station and then a grocery warehouse. Rent was $25 a month, but leasing part of the space to a local taxi firm brought in $15 of this.

• **String-At-A-Time**—To hold inventories in line with cash on hand, pipe was bought a string at a time. And since the office adjoined the railroad yards, Riney's bosses could look out their windows to spot car numbers on incoming freight trains. When numbers matched their shipping notices, they hustled out and sold the shipment, even before it had to be unloaded. That produced enough money for the next string.

As precarious as it was, this system worked so well that within 2 years after the store's opening, it was able to order its first solid trainload of Pittsburgh Seamless. That was in 1935. And it has been handling Pittsburgh oil country goods ever since.

When nearby KAMAY field opened, 48 of the first 50 strings sold there were from Riney's company. Stressing service and quality products, the company has grown steadily since then. Sales now are expressed in millions of dollars a year. Seven stores handle upwards of 1500 customers.

By keeping emphasis on its first main product—pipe—Riney's company achieves a rapid turnover on what amounts to half its inventory.

Riney agrees with principals of his company when they set down this list of advantages offered by the independent distributors shown at right:

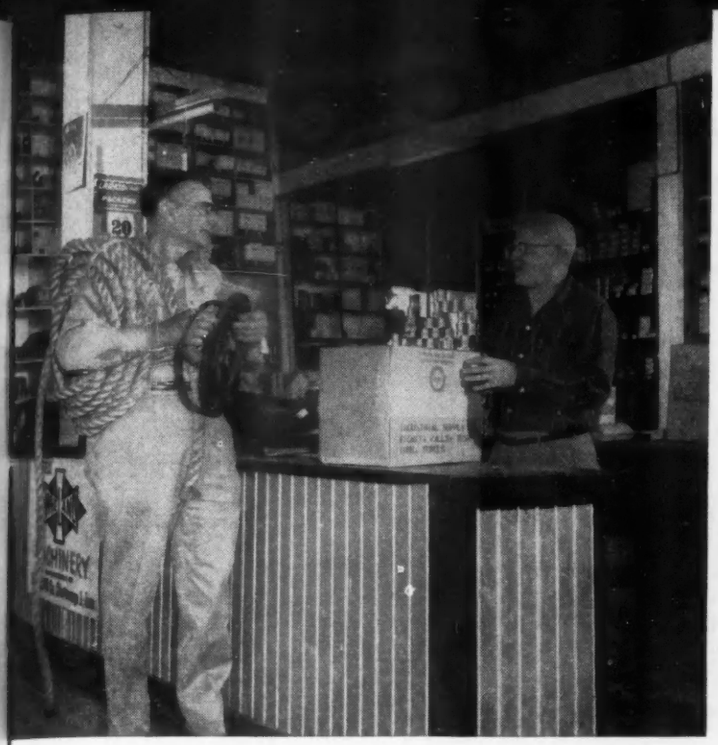
1. An independent's stores are the first in a field and the last to leave. Proof: Riney's company still maintains a KAMAY store, even though the field is completely developed.

2. The independent is a local businessman. His success in any one community depends on his reputation for service and quality.

3. The independent knows the field he's serving. For example, Riney stresses the importance in his area of the good quality, metallurgically controlled resistance to corrosion material provided by Pittsburgh Seamless.

4. Independents support the community where they live and work. Several principals in Riney's company hold important volunteer civic jobs.

5. Business decisions requiring detailed understanding of specific prob-



In the Store—"Riney," manager of one of the largest independent inland supply stores, knows what products will be needed by customers. As an independent, he is free to stock only the best products, such as Pittsburgh Seamless. The best in products and service is offered. . .

Even on Street Corner, "Riney" gives service. Here he checks maps of a new drilling location with drilling contractors Charles E. Morrison and Jack Grace. "Riney's" company has been handling Pittsburgh Seamless oil country goods since 1935.

lems are made quickly. A commercial decision in Riney's company takes only the time required to walk 50 feet from sales counter to the president's office.

6. Versatility. Riney offers for sale an inventory his company feels is the largest of any inland store. "Our customers know we have the part they need and this keeps costly drilling delays at absolute minimum," he says.

7. Location. Being in the heart of the producing area where oilmen transact their business, Riney gives maximum service.

Riney sums it up this way:

"Pittsburgh Steel helped us grow in the supply business by shipping us pipe that meets API specifications more consistently than that of most other producers.

"The pipe we need around these parts has to be rugged. Pittsburgh's tubing, especially with that (blackening) coating is as good as any made. We don't have any trouble with the Pittsburgh Seamless Casing we sell due to the high quality materials we receive. And the drill pipe holds up as well, if not better than any, especially under the severe stresses to which it is applied.

Riney and the independent he works for are typical of the more than 140 stores handling Pittsburgh Seamless. They specialize in service, help keep drilling costs low. An independent's prices are in line because his livelihood depends on meeting competition. He offers only the best in equipment because he is free to buy only what he wants to buy. And equipment manufacturers back up their independent distributors.

Riney's company is typical of the distributors listed on the right. So, next time you buy drill pipe, casing or tubing, use the combination that can't be beat—independent distributors—handling Pittsburgh Seamless.

Distributor Home Offices

Bradford Supply Company
130 Main Street
Bradford, Pennsylvania

Buckeye Supply Company
18 Harrison Street
Zanesville, Ohio

C. W. Cotton Supply Company
Utica National Bank Building
Tulsa 5, Oklahoma

Franklin Supply Company
624 South Michigan Avenue
Chicago 5, Illinois

Houston Oil Field Material Co.
1524 Maury Street
Houston, Texas

Industrial Supply Company
500 Eighth Street
Wichita Falls, Texas

Iverson Supply Company
400 West Fifth Street
Tulsa, Oklahoma

Lucey Export Corporation
233 Broadway
New York 7, New York

Lucey Products Corporation
624 South Cheyenne
Tulsa 19, Oklahoma

McJunkin Corporation
P. O. Box 513
Charleston 22, West Virginia

Midland Supply Company
Box 3105
Washington St. Station
Wichita 7, Kansas

Mountain Iron & Supply Co.
100 Rule Building
Wichita 2, Kansas

Murray Brooks, Incorporated
P. O. Box 855
Lake Charles, Louisiana

The Producers Supply & Tool Co.
706 Commercial Standard Bldg.
Fort Worth 2, Texas

Rodman Supply Company
P. O. Box 591
Odessa, Texas

Southwest Supply Company
1720 Oliver Building
Pittsburgh, Pennsylvania

Superior Iron Works & Supply Co.
P. O. Box 1800
Shreveport, Louisiana

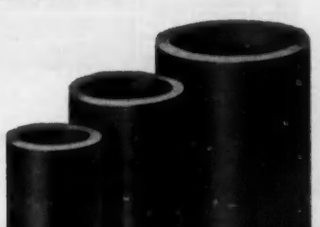
Western Supply Company
424 North Boulder Avenue
Tulsa 1, Oklahoma

Pittsburgh Steel Company

Grant Building • Pittsburgh 30, Pa.

District Sales Offices

Atlanta	Cleveland	Dayton	Los Angeles	Pittsburgh
Chicago	Dallas	Detroit	New York	Tulsa
		Houston	Philadelphia	Warren, Ohio



ager to manager of production for Mobil Oil Francaise. **Leo Damesin,** former deputy chief geologist with Iraq Petroleum Company in London, is the new chief geologist for Mobil Oil Francaise.

•

James E. Gosline

Earl M. Kipp

James E. Gosline has been appointed to the post of director, vice president and assistant to the president of **The California Company.** Gosline succeeds **Earl M. Kipp** who moves to California to assume Gosline's former position of special producing consultant on Standard's executive staff. Gosline served as special producing consultant from October to December of 1957. Previously he was general manager of the Producing department. He joined Standard as an engineer in 1933. Kipp joined the company in 1936 and served as a petroleum engineer in California, Texas, New Mexico, Mississippi and Louisiana. In 1946 he was named chief engineer for Calco and took over his latest post there in 1956.

•

Hugh H. Beach has been appointed assistant to the vice president of **The Texas Company's** Domestic Producing department. He succeeds **S. A. Berthiaume,** who was recently named vice president and manager of the Texaco Exploration Company, Calgary, Canada. Dr. Beach, formerly chief geologist of the department in Houston, will have his headquarters in New York.

Hugh H. Beach

After service with the Geological Survey of Canada, Dr. Beach joined McColl-Frontenac Oil Company Limited, as senior geologist in the Western division in 1943, and was made chief geologist in 1948. Three years later he joined Texaco Exploration as chief geologist, and the following year was promoted to assistant manager. In 1955 he was appointed chief geologist of The Texas Company's Domestic Producing department.

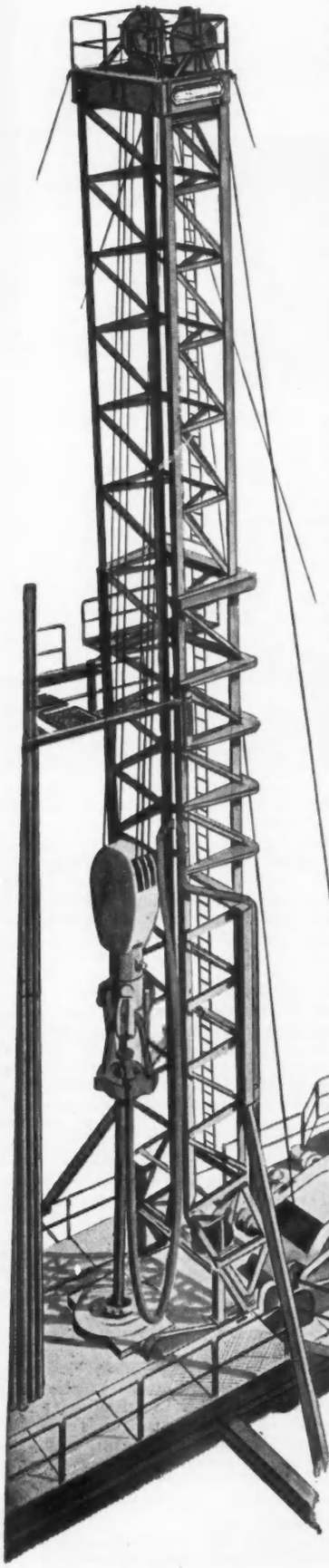
•

Robert J. Fanning has beeen appointed to the position of senior research engineer in **Continental Oil Company's** Development and Research depeartment. Dr. Fanning will supervise the activities of the newly created automation group.

•

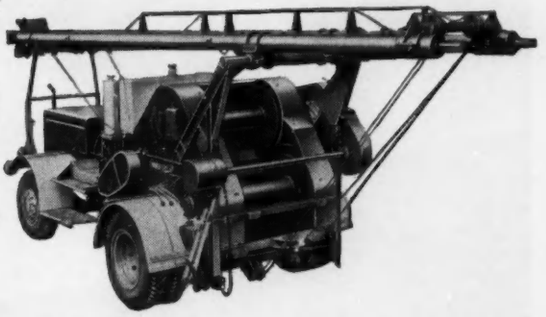
Union Oil and Gas Corporation of Louisiana has established a new division office in Calgary, Alberta, Canada. **Herman A. Engel, Jr.,** has been named division manager; **Kenneth W. Germond,** division

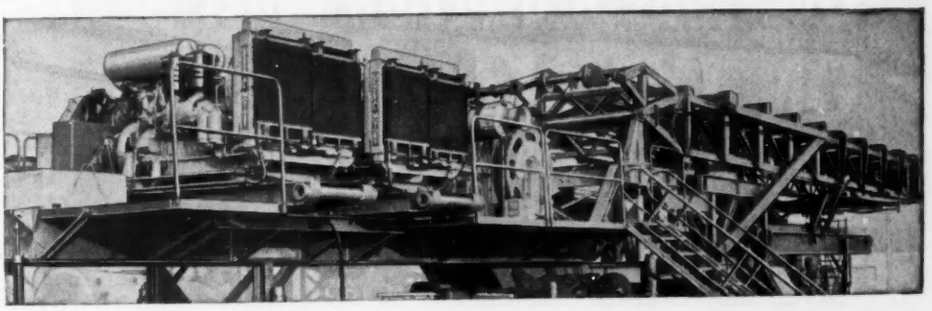
IDECO WOODFIELD OF ROCHESTER



Woodfield are licensees in the United Kingdom for the manufacture and sale of the range of IDECO drilling and production equipment.

The Woodfield plant at Rochester, constantly developing and enlarging its facilities, provides the means of producing first-class equipment. This, combined with frequent visits of senior technical and service personnel to fields and installations the world over, provides a service indispensable to operators requiring special equipment.



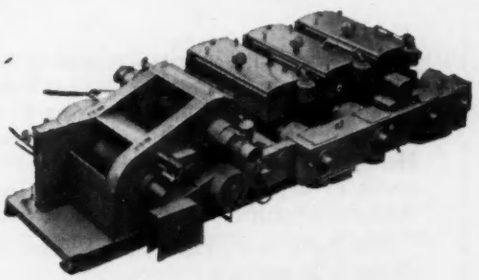


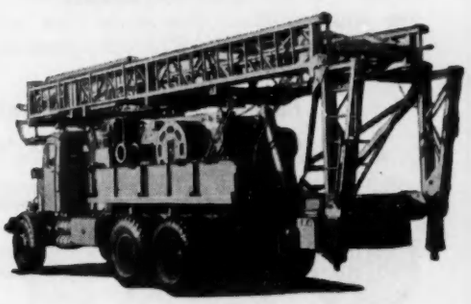
Top illustration:
Woodfield "Fieldmaster" Mobile Well Servicing and Workover Rig. Well depths up to 4,000 ft.

Centre illustration:
WOODFIELD built IDECO Hydrair H-525 Dual Rambler drilling and servicing rig for wells 7,000/8,000 ft. depth. Drilling to 7,500 ft. with 4½" drill pipe.

Right illustration:
WOODFIELD built IDECO Hydrair H-40-D Double drum draw-works with 3 AEC engines, 450 H.P. and 4 shaft drive compound.

Lower right illustration:
WOODFIELD built IDECO H-20 double drum Well Servicing Rig. Well depth 3,000-4,000 ft.





WOODFIELD HOIST & ASSOCIATED INDUSTRIES LTD.

Makers under Licence of (IDECO) Oilfield Equipment

Frindsbury Works · Rochester · England

Telephone: STROOD 78421 (5 lines) Telegrams: WOODFIELD-TELEX-ROCHESTER Telex: 99100 WOODFIELDSTROOD

London Office: 147, Victoria Street, S.W.1

Telephone: TATe Gallery 4135 Telegraphic Address: Powerigs London

associating:

KEMWORTHY JIG & PRESS TOOL COMPANY LTD.
HIGH STREET, COLLIERS WOOD, LONDON, S.W.19.

R. H. CORBETT AND COMPANY LIMITED
HYDRUN WORKS, BURGESS HILL, SUSSEX

Mr. Victor H. Bello
AFIA's Supervisor
for the Philippines

"Fire, explosion, windstorm and accidents are the same the world over. But, not insurance. To have proper protection, you have to be sure your insurance conforms to the laws and requirements of the country where your risk is located." So says Mr. Victor H. Bello, AFIA's supervisor for the Philippines. He knows through years of experience handling the insurance protection of leading American companies operating abroad.

Mr. Bello is typical of AFIA's key men strategically located in 630 cities in 70 countries throughout the world. These insurance experts are your constant assurance that when you insure your overseas properties through AFIA your protection will conform to local laws, be strong, sure and on the beam.

For overseas insurance protection unsurpassed
ask your agent or broker to consult with AFIA

AFIA

AMERICAN FOREIGN INSURANCE ASSOCIATION
161 William Street • New York 38, New York

CHICAGO OFFICE . . Insurance Exchange Building, 175 West Jackson Blvd., Chicago 4, Illinois
DALLAS OFFICE . . . . . 400 Vaughn Building, 1712 Commerce Street, Dallas 1, Texas
LOS ANGELES OFFICE . . . . . 3277 Wilshire Boulevard, Los Angeles 5, California
SAN FRANCISCO OFFICE . . Russ Building, 235 Montgomery Street, San Francisco 4, California
WASHINGTON OFFICE . . . Woodward Building, 733 15th Street N.W., Washington 5, D.C.

An association of 22 American capital stock fire, marine, casualty and surety insurance companies providing insurance protection in foreign lands

manager of exploration; **H. P. Evans, division landman, and Troy C. Simpson,** division production superintendent.

•

Ralph E. Damp has been named manager of production and exploration of **American** Petrofina, Inc. Damp will headquarter in New York, where he will be in charge of all production and exploration activities of American Petrofina. Damp was associated with Standard Oil Company (New Jersey) and its subsidiary companies for 30 years. After moving to New York with Standard of New Jersey, Damp was assigned to the Foreign department for 10 years which included extensive service in Latin America and culminated in an executive position in the Producing Coordination department. Damp then became an independent oil consultant, in which capacity he has served until his appointment with American Petrofina.

Ralph E. Damp

•

Sir Kenneth B. Harper retired from the board of directors of the **British Petroleum Company Ltd.** recently and was replaced by **Robert Paterson Smith.**

•

Petroleum Exploration, Inc., announced that **Bernard J. Mahoney,** petroleum engineer, has joined the company. Mahoney will handle the drilling, completion and production problems for Petroleum Exploration and direct the commencement of a petroleum engineering consulting service. Mahoney has just returned from Venezuela, S. A., where he was under contract to the Creole Petroleum Corporation.

•

Socony Mobil Oil Company, Inc., has announced two important promotions of its producing personnel. **Fred H. Moore,** coordinator of domestic production, has been appointed general manager of the Producing department. His successor as coordinator of domestic production is **Henry L. Waszkowski,** who has also been named a member of the producing committee. Prior to his new assignment, Waszkowski was assistant to the manager of the company's producing department. Moore was employed by the Magnolia Petroleum Company, Socony Mobil's southwestern affiliate, from 1935 until April, 1956, when he was named executive vice president of Mobil Oil of Canada, Ltd. He was recently transferred to Socony Mobil as coordinator of domestic production. Waszkowski joined Magnolia in 1939. He rose to become assistant superintendent of Magnolia's Producing district headquarters at Falfurrias, Texas, before being transferred to Socony Mobil as assistant to the coordinator of production.

•

Western Gulf Oil Company announced that **L. E. Warren,** formerly assistant district exploration manager of Gulf Oil Corporation's Fort Worth, Texas, division, will be appointed division exploration

Announcing Three Complete Locations to Serve You!

HOUSTON. Wayne A. Johnson, President, directs the company's activities from the Main Office in Houston. Mr. Johnson is well known in the cathodic protection profession and is the author of many technical articles in the field. P. O. Box 19177, Houston, Texas.

GREAT BEND, KANSAS. Harvey Fanshier, Mid-Western representative for Corrosion Rectifying Company is a graduate of Kansas State College with extensive experience in salt water disposal and corrosion prevention. Rt. 2, Great Bend, Kansas.

NEW ORLEANS, LA. James T. Condry, New Orleans representative, is a graduate Electrical Engineer in charge of evaluation, design, installation and materials sales for the Louisiana territory. He has wide experience in marine and offshore installations. 2322 Airline Highway, Kenner, Louisiana.

COMPLETE CORROSION PREVENTION
(Cathodic Protection)
SERVICE

CORROSION RECTIFYING CO., INC.
5310 Ashbrook — Phone MO 7-6659
P. O. Box 19177 • Houston, Texas

NATIONAL BANK OF TULSA

STATEMENT OF CONDITION AS OF
DECEMBER 31, 1957

RESOURCES

Cash and Due from Banks	$107,194,939.88	
U. S. Government Securities	72,039,718.48	
Other Bonds and Warrants.	11,821,041.89	$191,055,700.25
Loans and Discounts.....		96,014,993.42
Repurchase Agreements—		
U. S. Government Securities		9,930,000.00
Income Receivable Accrued.		430,320.96
Stock in Federal Reserve Bank		375,000.00
Bank Premises		4,000,000.00
Customers' Liability Under Letters of Credit		290,731.12
TOTAL		$302,096,745.75

LIABILITIES

Deposits		$281,333,622.65
Letters of Credit Outstanding		290,731.12
Income Collected, Not Earned		391,455.66
Reserve for Taxes, Interest, Etc.		1,866,993.63
Capital—Common .....$	5,000,000.00	
Surplus	7,500,000.00	
Undivided Profits and Reserves	5,713,942.69	18,213,942.69
TOTAL		$302,096,745.75

NATIONAL BANK OF TULSA
THE OIL BANK OF AMERICA
MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION
TULSA, OKLAHOMA

good books for oil men!

Books of interest to oil men are available through Gulf Publishing Company. A carefully chosen book is a permanent help to you in your job. Listed here are just a few of the books offered for your selection.

- **Petroleum in the Western Hemisphere**
  Western Hemisphere Oil Study Committee of IPAA — Price $2.50
- **Rotary Drilling Handbook**
  by J. E. Brantly — Price $10.00
- **Practical Petroleum Engineer's Handbook**
  by Joseph Zaba and W. T. Doherty — Price $14.00
- **Composition and Properties of Oil Well Drilling Fluids**
  by Walter F. Rogers — Price $10.00
- **Oil Property Valuation**
  by Paul Paine — Price $5.50
- **Practical Accounting for Oil Producers**
  by Robert M. Pitcher — Price $12.00
- **Volumetric and Phase Behavior of Hydrocarbons**
  by Bruce H. Sage and William N. Lacey — Price $5.00

Send for your FREE copy of the New Petroleum Books Catalog which describes the nature and contents of these and many other books pertaining to the Petroleum Industry.

In ordering please make certain that your complete mailing address is included. Designate desired books by title and author. Attach your check or money order, and shipment will be made promptly via prepaid parcel post.

BOOK DEPARTMENT
THE GULF PUBLISHING COMPANY
P. O. Box 2608, Houston 1, Texas

Make your working capital work

FACTORING FOR DIVERSIFIED INDUSTRIES

Let us assist you in strengthening your financial structure by purchasing your accounts receivable.

- **Turn your working capital day by day.**
- **Eliminate credit losses.**
- **Eliminate clerical and credit personnel cost.**
- **Increase your borrowing power at your bank.**

Factoring May Open Wider Doors to Your Future

GULF COAST FACTORS, INC.
3011 San Jacinto, Houston, Texas
PHONE: JAckson 6-2736

manager of Western Gulf, succeeding **G. W. Ledingham** recently transferred to Gulf Eastern Company, London. Also effective, **H. B. Leeton,** formerly division production engineer of Gulf's Houston division, will be appointed division production manager, Western Gulf, succeeding **C. B. Hussey** recently transferred to Gulf Eastern, London.

•

J. D. Fosque has been elected vice president of **California Texas Oil Company Ltd.** and will direct marketing and refining service activities on behalf of all Caltex companies in Europe and Africa. Formerly managing director of Caltex (India) Ltd., Fosque returned to New York in 1954 as European general manager. He remains in New York in his new assignment.

•

Hudson's Bay Oil and Gas Company Limited, has announced the appointments of an assistant manager of exploration along with an assistant chief geologist. **M. B. Morris** joins the company as assistant manager of exploration. Prior to joining Hudson's Bay he was assistant manager of the Headquarters Geological section for Continental Oil Company at Houston. **R. J. Hamilton,** assistant chief geologist, joined the company as a staff geologist in 1949.

J. A. Rogers, who began his career as a junior geologist around Wichita Falls, Texas, 21 years ago, has been promoted to chief geologist, General Manager's office of **The Texas Company's** Domestic Producing department, with headquarters at Houston. In 1946, he became district geologist in Midland, Tex. He was promoted to senior geologist in the West Texas division office at Fort Worth in 1951. Since 1956, Rogers has served as senior geologist in the General Manager's office at Houston.

J. A. Rogers

•

William T. Hudson has joined the staff of **Keplinger and Wanenmacher,** petroleum consultants, as a petroleum engineer. He is moving to Tulsa from Denver where he worked for Cabeen Exploration Corporation as district production superintendent. He formerly has worked in West Texas, Arkansas and Colorado for the Lion Oil Company as a petroleum engineer.

•

R. E. Warner

R. E. Warner, associated with **Forest Oil Corporation** for 28 years, has been appointed vice president in charge of primary production. Warner joined the Forest organization at their home office in Bradford, Penn., and was transferred to Texas in 1936.

•

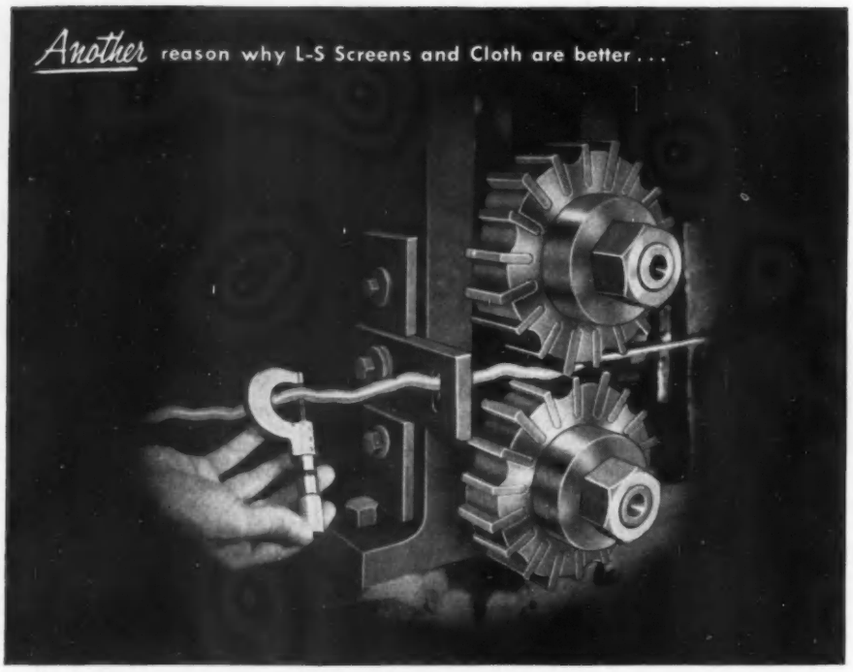
George F. Berry, New Orleans, has been promoted to assistant regional geophysicist for **Continental Oil Company's** Southern region. Formerly division geophysicist for Conoco at New Orleans, he will make his new headquarters in Houston and will succeed **J. W. Wilson.** Berry joined Conoco in 1947 and served on geophysical crews in several states before becoming a geophysical supervisor in Houston in 1953.

•

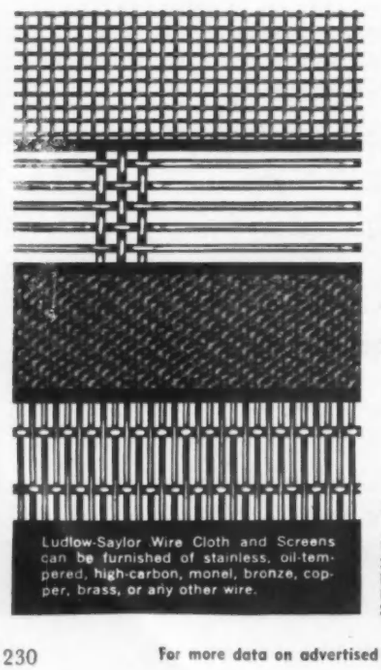
Frank M. Jacobson, has been named a director, vice president and general manager of **Murphy-Canada Oil Company** with offices in Calgary, Alberta. He is a veteran of 30 years in the oil industry and served in various capacities in field and office with the Humphreys Oil Company, which was later acquired by Pure Oil Company, in Mexia, Corsicana and north Texas. He was also connected with Marland Oil Company, which later became Continental Oil Company. In 1935 he became manager and vice president of Buffalo Oil Company. In 1951 he was president of Lucerne Corporation, a producing and developing company. He sold this business in 1956.

•

Ken E. Boling, production superintendent for Bishop Oil Company in Abilene,



1 of every 3 production employees perform inspections to insure perfection of L-S Wire Cloth & Screen



Ludlow-Saylor Wire Cloth and Screens can be furnished of stainless, oil-tempered, high-carbon, monel, bronze, copper, brass, or any other wire.

No customer of ours ever worries about the quality and accuracy of the screens and cloth we ship him. With every third man in our factories charged with inspection responsibility, we know our product is right before shipment.

This extra care makes L-S Wire Cloth and Screens the best obtainable for every sizing, straining, filtering operation. They have better dimensional stability—greater resistance to abrasion, vibration, heat, high pressure. L-S Screens and Wire Cloth cost no more than ordinary screens.

***Immediate Shipment** of most weaves and sizes*

Write for Condensed Screen Reference Catalog

Ludlow-Saylor WIRE CLOTH CO.

SINCE 1854

640 S. Newstead Ave. • St. Louis 10, Mo.

SALES OFFICES: Birmingham, 1727-6th Ave. N.; Chicago, 5708 W. Diversey; Pittsburgh, Union Trust Bldg.; Houston, 1213 Capitol Ave.; Denver, 1530 Carr St. WEST COAST SUBSIDIARY: Los Angeles, Star Wire Screen and Iron Works, Inc., 2515 San Fernando Road.

Texas, has been appointed production superintendent for the Pembina district of Canadian Bishop Oil, Ltd., with headquarters at Drayton Valley, Alberta.

•

Fred L. Oliver

Frank West

Fred L. Oliver and **Frank West** have announced the establishing of consulting offices in the Trinity Universal Building, Dallas. The firm will be known as **Fred L. Oliver & Associates**, and will specialize in petroleum engineering and petroleum geological consulting, valuations and appraisals, and oil and gas property management. Oliver leaves DeGolyer & MacNaughton to establish the new firm, after having spent five years with this company. He previously had worked briefly for Petty Geophysical Co. and Robertson Drilling Co., and for Stanolind Oil & Gas Co. for over three years. West will retain his present position of trustee for the estate of J. B. Stoddard. West worked for 5½ years for Continental Oil Co. in California, Oklahoma and Texas. In 1953, he joined J. B. Stoddard, independent oil operator, as assistant manager and chief engineer.

•

The British American Oil Company Limited, Production and Pipe Line department, Calgary, announced the appointment of **J. A. Strand** as petroleum engineering supervisor. Strand joined Gulf Oil Corporation at Seminole, Okla., in 1950. In 1953 he joined Canadian Gulf Oil Company at Calgary, and at the time of the assumption by British American of the former company's operations, he was division reservoir engineer. In his new position he is responsible for the development and execution of the company's plans and procedures respecting drilling and completion operations and field development. He assumes the position vacated by **Floyd D. Aaring**, recently appointed zone production manager in the Calgary production zone.

•

Leo M. Wright, division geologist for **Sinclair Oil & Gas Company** at Houston, has transferred to Sinclair Oil Refining Company, Venezuela, as assistant chief geologist, headquartered in Caracas. He joined the Sinclair organization in 1952.

•

Venezuelan Petroleum Company announced the election of three additional vice presidents, **E. J. Mulvihill, Jr., J. J. Quoyeser** and **B. N. Moore**. Mulvihill and Quoyeser will continue as manager and assistant manager respectively, and Moore as director of exploration and chief geologist.

•

J. B. Storey, employe of United Gas Corp., has been elected a director of **Union Producing Company**, production subsidiary of United Gas. He has been manager of the New Orleans district of United Gas Pipe Line Company and Union Producing Company since 1950. **R. G. Bryan**, assistant manager of the New Orleans district since 1956, will succeed Storey as district manager at that place.

•

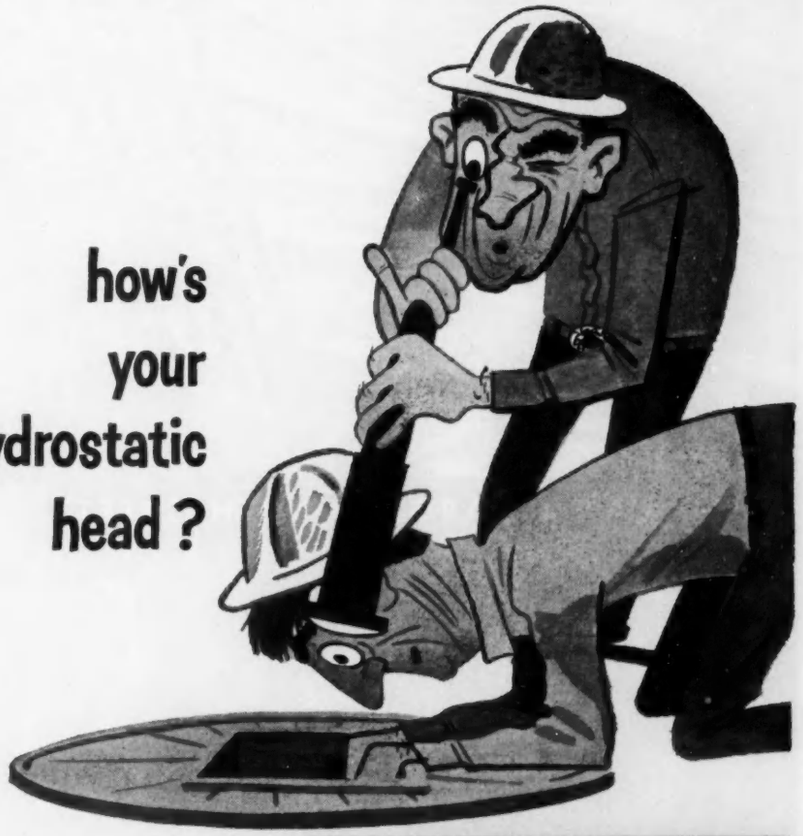
Jerry H. Doughman has joined **Delhi-Taylor Oil Corporation** as chief petroleum engineer in the Production division. In this capacity, Doughman will direct the activities of the Production Engineering Department.

•

S. A. Berthiaume has been elected vice president and manager of the Texaco Exploration Company. Operating headquarters of the company are at Calgary, Canada. Before his election, he was assistant to the vice president in charge of Texaco's Domestic Producing department.

•

The California Company made five top appointments in the Production department recently: **J. O. Sanders** promoted to the position of assistant general manager of the Production department, succeeding **E. J. Deu Pree.** Formerly superintendent of Calco's Delta-Gulf Coast Production division in Harvey, La., Sanders will be headquartered in New Orleans. **R. E. France** replaced Sanders in the Delta-Gulf Coast division, moving from his post as superintendent of the South Louisiana Production division, also at Harvey, **D. D. Jackson, Jr.**, moved from Natchez, Miss., where he has been superintendent of the company's North Louisiana-Mississippi



SEE WHAT'S HAPPENING DOWN THE HOLE WITH **Pit-O-Graf**

(Records mud pit level)

From the Pit-O-Graf chart you can calculate effectively any loss in hydrostatic head due to gas or salt water incursion. The continuous mud pit level chart warns of blowouts or threatened blowouts and loss of circulation.

WARREN AUTOMATIC TOOL CO.

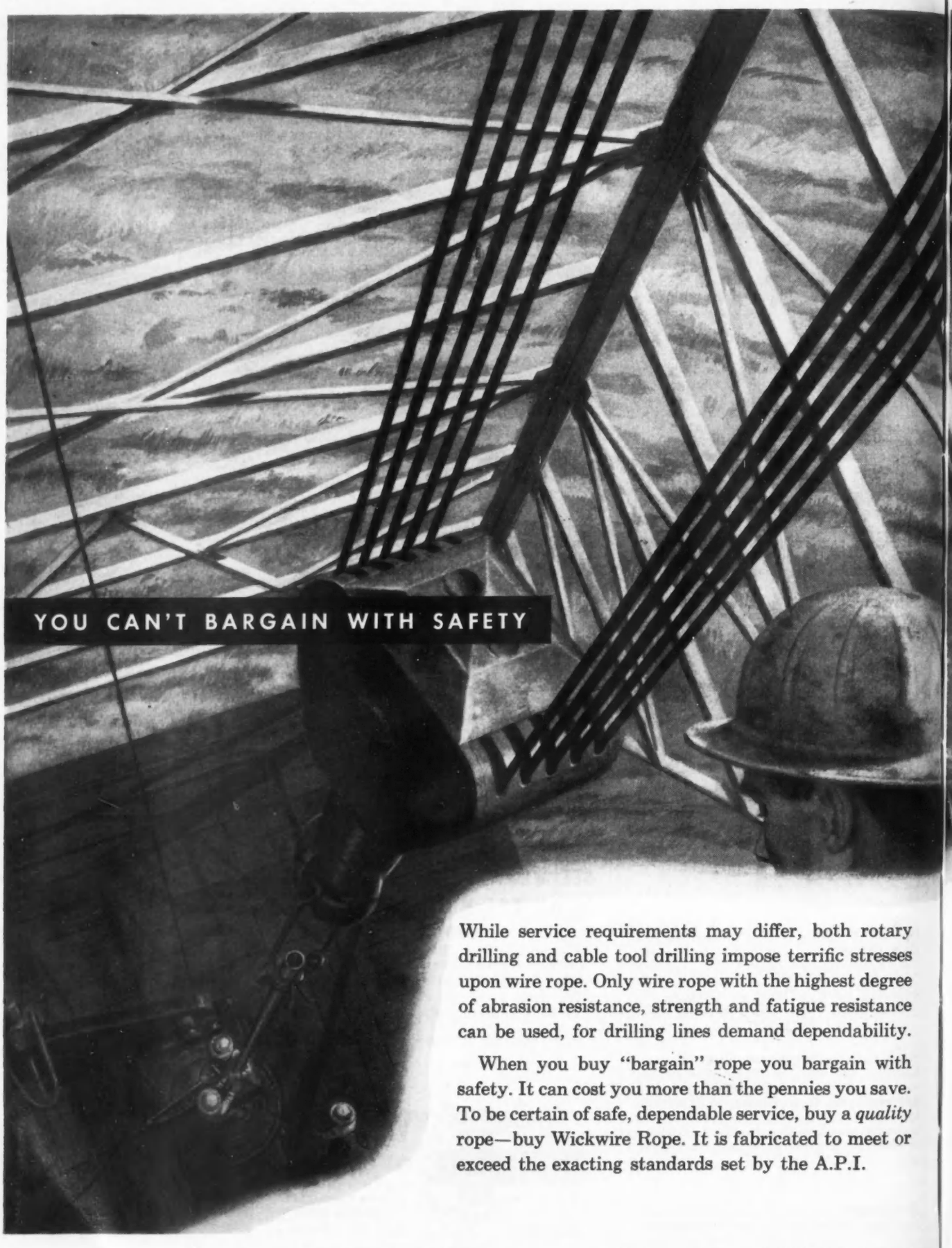
Manufacturers of Mud-O-Graf and Rig Runner.

3915 Tharp St. Houston CApitol 4-2511

Lake Charles, La. HEmlock 6-2265 | New Iberia, La. EMerson 9-9862 | Harvey, La. FOrest 6-1441

For more data on advertised products, use Readers' Service Cards, last page.

For SAFETY in oil field operations . .

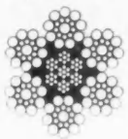


While service requirements may differ, both rotary drilling and cable tool drilling impose terrific stresses upon wire rope. Only wire rope with the highest degree of abrasion resistance, strength and fatigue resistance can be used, for drilling lines demand dependability.

When you buy "bargain" rope you bargain with safety. It can cost you more than the pennies you save. To be certain of safe, dependable service, buy a *quality* rope—buy Wickwire Rope. It is fabricated to meet or exceed the exacting standards set by the A.P.I.

s. . . buy WICKWIRE ROPE

ROTARY DRILLING LINES



6 x 19 Seale Construction—"Wisscolay" Preformed
6 strands—19 wires to the strand
1 fiber core or 1 Independent Wire Rope Core (IWRC)

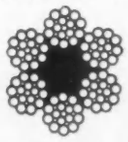
Wickwire's 6 x 19 Seale Construction with either IWRC or fiber core gives excellent service under severe conditions encountered in rotary drilling.

These ropes are supplied "Wisscolay" Preformed to provide better bending life over multiple-reeved blocks. The rope's relaxed condition also reduces whipping and allows more uniform winding on the drum.

The IWRC construction should be used if a line is subjected to crushing on the drum. This Wickwire construction provides maximum core support with a minimum of strand-to-core nicking. Crushing forces are uniformly transmitted to the very center of each strand. This allows the individual wires to resist displacement which occurs in some other constructions.

These ropes are available in three grades: Double Gray Extra Improved Plow Steel; Gray Strand Improved Plow Steel; Plow Steel.

CABLE TOOL DRILLING LINES



6 x 21 Filler Wire Construction
6 strands—21 wires to the strand
1 fiber core

This construction was adopted by Wickwire for Cable Tool Drilling. The size and number of outer wires provide the ideal balance between resistance to abrasion and ability to withstand bending over sheaves.

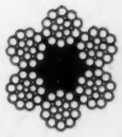
The steel which goes into Wickwire drilling lines is carefully selected and every subsequent stage of manufacture is closely controlled. Drilling lines are an item of considerable expense to the drilling contractor and this careful quality control assures the users of longest possible rope life.

The fiber core used in Wickwire Cable Tool Drilling Lines is also specially selected to withstand the rigors of this very severe wire rope application.

Wickwire 6 x 21 Cable Tool Drilling Lines are available in three grades: Gray Strand (Improved Plow Steel), Plow Steel, and Mild Plow Steel.

OTHER WICKWIRE ROPES FOR OIL FIELD USE

"WISSCOLASTIC" DRILLING LINE

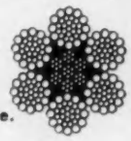


6 x 21 Filler Wire Construction
6 strands — 21 wires to the strand
1 fiber core.
Increased elasticity provides faster, smoother drilling, better absorption of shock loads, less vibration and whipping.

SAND AND CORING LINES

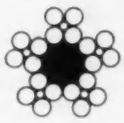
6 x 7 Construction—"Wisscolay" Preformed
6 strands—7 wires to the strand
1 fiber core.

TUBING, SUCKER ROD OR WINCH LINES



6 x 31 Seale Construction
"Wisscolay" Preformed
6 strands—31 wires to the strand
1 fiber core or 1 Independent Wire Rope Core.
Recommended for better winding and increased freedom from twisting.

TORPEDO LINES

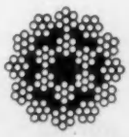


"Wisscolay" Preformed

5 x 5 Construction
5 strands—
5 wires to the strand

5 x 7 Construction
5 strands—
7 wires to the strand

TUBING OR SUCKER ROD LINES



18 x 7 *Non-Rotating* Construction
"Wisscolay" Preformed
18 strands—7 wires to the strand
1 fiber core.
Designed so a single part line can pick up an unguided load without causing load to spin. Outer and inner layers are twisted in opposite directions to counteract rope's tendency to unlay under pressure.

TAPERED DRILLING LINES

To eliminate excessive weight, lines are small at tool end and larger at drum end to support weight of cable and tool. Individually designed and manufactured to specific requirements. Write for information.

SOLID PLASTIC CORES

A core made from a specially developed plastic is available in Wickwire Drilling Lines which are required to operate under unusually severe conditions. This core is highly resistant to the damaging effects of acids and other corrosive fluids frequently encountered in the oil and gas fields.

LOOK FOR THE YELLOW TRIANGLE

Note: Wickwire manufactures Extra Improved Plow Steel rope under the name Double Gray. This rope, with a catalog breaking strength 15% higher than the catalog breaking strength of Improved Plow Steel ropes, is recommended for applications where maximum tensile strength is the prime requirement. Wickwire achieves this high strength with no loss of fatigue resistance or other important qualities.

PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

THE COLORADO FUEL AND IRON CORPORATION—Albuquerque • Amarillo • Billings • Boise • Butte • Denver • El Paso Farmington (N. M.) • Fort Worth • Houston • Kansas City • Lincoln (Neb.) • Odessa (Tex.) • Oklahoma City • Phoenix • Pueblo Salt Lake City • Tulsa • Wichita • **PACIFIC COAST DIVISION**—Los Angeles • Oakland • Portland • San Francisco • San Leandro Seattle • Spokane • **WICKWIRE SPENCER STEEL DIVISION**—Boston • Buffalo • Chattanooga • Chicago • Detroit • Emlenton (Pa.) New Orleans • New York • Philadelphia

5779

Production division, to Harvey as superintendent of the South Louisiana division. **C. L. Pickett** succeeded Jackson in the superintendency at Natchez. He has been superintendent of Calco's Western Production division with headquarters in Denver. **L. C. Soileau** returned to Calco from a foreign assignment as vice president and director, producing, for the Richmond Exploration Company in Venezuela, to become superintendent of the Western division in Denver.

•

Dr. C. R. Hetherington, vice president of **Pacific Petroleums, Ltd.,** has been appointed managing director of that company. He has been with Pacific since 1952 and prior to that was associated with the engineering firm of Ford Bacon and Davis.

•

Paul V. Baker

Garvey Drilling Company announced the appointment of **Paul V. Baker** as safety director for the company. Baker was formerly associated with Continental Oil Company for the past 12 years. He was administrative assistant to their Safety division. In his new position he will supervise a safety training program for the company's 250 employes and 17 rotary drilling rigs.

Ronald K. DeFord, a geologist at The University of Texas, was honored with a lifetime membership in the West Texas Geological Society in Midland, Texas, the society's headquarters. DeFord's research specialty is structural geology of the southwest, especially in West Texas, southern New Mexico and northern Chihuahua.

•

Sohio Petroleum Company has announced several personnel changes at the district level within the Houston offices. **R. J. Field,** formerly Houston district land and exploration superintendent, has been transferred to the division office in Houston as staff assistant to the exploration manager.

•

Sinclair Oil & Gas Company opened a new exploration and production office in New Orleans recently to handle company operations in southeastern Louisiana. The new district office will be a part of the Houston division. Offices will be located on the 19th floor of the National American Bank building in downtown New Orleans. **Richard L. Porter,** Houston, will be transferred to New Orleans as district manager. Other key personnel in the district includes: **George R. Lewis,** senior geologist; **H. C. Spence, Jr.,** senior computer; **James R. Arnold,** senior geologist; and **Gerald C. Rodrique, Glynn M. Schuchardt,** senior geophysicist, will be moved from Corpus Christi, Texas, to the new office.

•

Gulf Oil Corporation has announced a promotion in its Production department. **F. L. Carpenter,** district production manager of the Evansville, Ind., district, has been transferred to Houston as Leeton's successor.

•

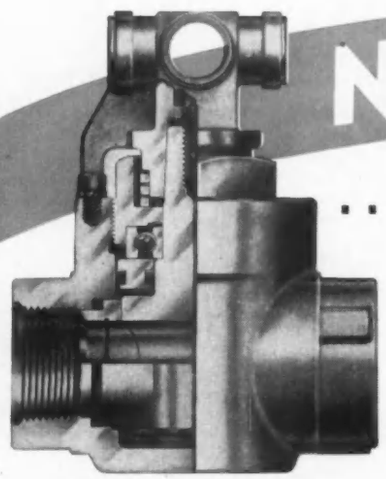
George H. Hirschfeld, engineer with the New Mexico Oil & Gas Engineering Committee for 16 years, has resigned his position and has joined **Moran Oil Producing & Drilling Corp.** in Hobbs, N. M. Hirschfeld will be active in all phases of Moran's contract drilling, leasing and oil producing operations.

•

Seaboard Oil Company has recently established an office in Caracas, Venezuela, in the Edificio Union, Sabana Grande, Avenida Abraham Lincoln. Employes transferred from Dallas to Caracas are **Paul Ravesies,** petroleum engineer; **D. E. Hibbard,** and **T. A. Edwards,** geologists, and **H. T. Christensen,** accountant. Ravesies is in charge of the office.

•

C.A.P. Leahey, formerly special representative of the Bank of Montreal in Calgary, has been appointed manager of the



Non-Lubricated!

GRAHAM Plug Valves have full floating seats—pre-loaded plug—full opening or round-port restricted bores—corrosion-resistant parts.

. . . . plus many other features that make GRAHAM your best buy in valves.

Maintenance-free is the best way to describe GRAHAM Plug Valves . . . maintenance-free because they never require lubrication, and because they seal bubble-tight against all gases, liquids and slurries.

Now manufactured by Texsteam Corporation, GRAHAM Plug Valves are furnished in sizes and pressure ranges to meet all drilling and production requirements. For full information, write for the new catalog on GRAHAM Plug Valves—by TEXSTEAM.

TXT TEXSTEAM Corporation

DIVISION OF VAPOR HEATING CORP

320 HUGHES ST. • P. O. BOX 9127, HOUSTON 11, TEXAS • PHONE WA 6-8853

bank's Oil and Gas department there. Leahey has been active in the B of M's development in the oil fields of Alberta for a number of years, and, in his new capacity, he will have working closely with him **A. C. Petley Jones,** special representative of the bank's Business Development department in Calgary.

•

Dr. J. N. Payne, division geologist for the Gulf Coast division of **Sohio Petroleum Company,** is the new chief geologist at the company's headquarters in Oklahoma City. In his new post he is responsible for the geological portion of the company's exploration program, reporting to General Manager **R. W. Edmund.** Payne was professor of geology at the University of Arkansas from 1945, until he joined Sohio's Gulf Coast division at Houston in 1953. He has been division geologist since June of this year.

Dr. J. N. Payne

•

C. V. Cameron has been named chief exploitation engineer for **Shell Oil Company's** Houston area. Cameron joined Shell at McPherson, Kansas, in 1937, as a trainee. Since that time he has held engineering positions in Oklahoma, Texas, Illinois, Colorado and New York. He moves up from the position of division exploitation engineer in the company's Houston division. Cameron replaces **H. J. W. ten Broeke,** who leaves for a foreign assignment.

•

Shelton-Warren Oil Company elected two Hobbs, N. M., business men to their board of directors. The new directors are **C. D. Munger,** merchant and real estate operator, and **R. S. (Cinco) Rogers,** cashier of the Lea County State Bank. Their election followed adoption of a resolution increasing the number of directors on the Shelton-Warren board from three to five.

DEATHS

Frank Edward Hart, 64, retired division superintendent for Gulf Oil Corp., died November 25. Hart had been with Gulf for 40 years.

George L. Stanley, 87, last surviving charter member of the old Ponca Development Co., died December 3. He was associated with the late E. W. Marland in the Ponca Development Co. Marland's oil company later merged with Continental Oil Co.

Claig H. Perry, 47, vice president of the Texas Natural Gasoline Corp., died December 2.

George S. Flanders, 63, died in Houston on December 14. He was formerly chairman of export sales for 12 years for Lane-Wells Co.

C. L. Clausel, 62, independent oil operator and former president of A-1 Bit and Tool Co., died December 31 in a Houston hospital.

James M. West, 54, died December 18 in a Houston hospital. He was formerly president of West Production Co., liquidated in 1950.

James L. Noland, 78, retired drilling contractor, died December 16.

Jack Eldon Sherrod, 61, president of the Great Plains Oil Company, died December 22.

Tom C. Hefner, 66, Okemah, Okla., annuitant of Pan American Petroleum Corp., died December 16. At the time of his retirement in August, 1956, Hefner was production foreman in Pan American's West Edmond area. He had been with the company 35 years.

Ray Biddle, 48, district superintendent for Kerr-McGee Oil Industries, died December 31.

Edward T. Wilson, 88, former president of the Continental Oil Co., died December 27. Wilson retired as president and chairman of the board in 1932.

C. (Slim) Harrison, 89, died January 6 in a Houston hospital. He was a former scout and drilling superintendent in the Louisiana oil fields. More recently he was a sales representative for Hughes Tool Co.

Big Ben

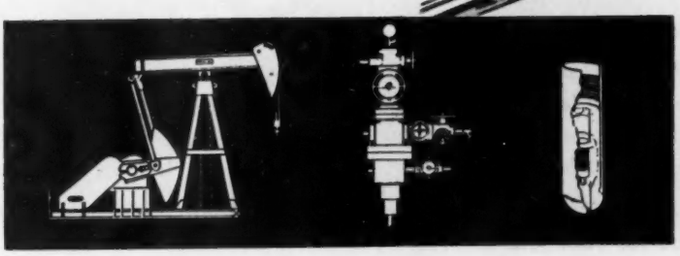
This Most Famous Clock

is named after Sir Benjamin Hall who was London's Commissioner of Works when Big Ben was installed exactly 100 years ago. The mechanism which has kept Big Ben reliable and accurate during the past century is a tribute to British industrial craftsmanship.

This renowned clock symbolises to the people of the world qualities of endurance and reliability, the same qualities which have gained for LeGrand its outstanding reputation in Oilfields the world over.

At their plant in Rochester, Kent, all the knowledge and experience of years of Oilfield technique go into producing a wide range of equipment, including the famous "L" series Pumping Unit; LeGrand OCT. Wellhead equipment; LeGrand-Howco floating equipment; and LeGrand-S. C. Carter long-stroke Hydraulic Pumping Units; Davey Compressor light Rotary Air Drilling Rigs

LEGRAND



For full details, please write to:

LE GRAND ROCHESTER LIMITED

HORSTED AIRPORT • ROCHESTER, KENT, ENGLAND

Telephone: CHATHAM 44626

Also represented in the following countries:

CANADA	TRINIDAD	VENEZUELA	
		Eastern	*Western*
Le Grand Ltd., 111-58th Avenue South West Calgary, Alberta	Industrial Agencies Ltd., 14, High Street San Fernando, Trinidad, B.W.I.	A-Z Export, S.A. Apartado 4026, Puerto La Cruz, E. Venezuela.	A-Z Export S.A. Apartado 304, Maracaibo, W. Venezuela.

New Books, Maps and Movies

PHASE RELATIONS OF GAS CONDENSATE FLUIDS, Monograph No. 10, Volume 1, American Gas Association, Order Department, 420 Lexington Ave., New York 17, N. Y., $10.

Cooperative research by the Bureau of Mines and American Gas Association has resulted in the availability of a technical report.

It describes tests that can be used to determine the properties of gas and natural gas liquids at various temperatures and pressures. Such information is needed to solve engineering problems encountered in recovering these fluids from underground reservoirs.

•

THREE LEGGED ISLANDS, R. G. LeTourneau, Inc., 2399 South MacArthur, Longview, Texas.

R. G. LeTourneau, Inc., has announced availability of a new 18-minute color movie entitled "Three Legged Islands" showing construction and operation of LeTourneau-built offshore platforms.

The two principal platforms discussed in the movie are the "Scorpion," which recently set a time record for relocation activity in the Gulf of Mexico, and the "Vinegarroon," which weathered hurricane Audrey with virtually no damage.

Three others also are shown during construction stages at Vicksburg, Miss.

The 16 mm. sound movie is available for showings to petroleum groups without charge.

•

MICROSCOPIC BEHAVIOR OF FLUIDS IN POROUS SYSTEMS, American Petroleum institute, 50 West 50th Street, New York 20.

In this new Kodachrome sound film, prime emphasis has been placed on those phenomena bearing more directly upon displacements involving two-phase combinations of oil, gas and water. The matrices considered are uniform single-layered packs of spherical grains and thin sections of natural reservoir rock.

Microscopic saturation structures illustrating the influences of packing, flow rate, fluid viscosities and surface phenomena are shown. Flow behavior and displacement performance in actual reservoirs may be inferred from these observations.

Running time for the film, which is available in 16 millimeter, is about 37 minutes. It is available to petroleum companies, educational and scientific institutions and societies by writing on their letterhead to E. O. Mattocks at the above address.

•

CONSERVATION IN THE PRODUCTION OF PETROLEUM: A STUDY IN INDUSTRIAL CONTROL, Yale University Press, by Dr. Erich W. Zimmermann.

Dr. Zimmermann, professor of resources and economics at The University of Texas, has made a study which carefully traces the petroleum conservation program affecting both oil and gas production, which has developed in the U. S. since the late 1920's and early 1930's.

"Dr. Zimmermann examines its history, reviews its legality, exposes its problems and weaknesses and appraises its achievements. On balance, he finds the program a sound contribution to the orderly government of one of the most vital industries of the nation," the publishers note.

•

PUBLICATIONS - SERVICES - FILMS, American Association of Oilwell Drilling Contractors, 505 North Ervay St., Dallas.

This catalog lists 34 AAODC publications on drilling economics, technology and safety. Sound-color motion pictures, 16 mm., include nine on drilling safety, eight technical training and three supervisory training films. Brief descriptions and prices are given.

LITTLE JACK

WITH

"BIG STUFF"

A team of these 125-ton hydraulic jacks can move a substructure on an offshore barge in hours instead of days. The custom-made example pictured above has proved it.

This jack is designed to fit into a special beam holder at one end, and to be welded to the substructure at the other. It works off a standard accumulator unit on the barge. It can pay for itself with one move.

Write, wire, or phone Joe Stine, Inc., about hydraulic jacks custom-made for your job.

JOE STINE INCORPORATED

6022 CHOCOLATE BAYOU ROAD

HOUSTON 21, TEXAS

P. O. BOX 14471 PHONE JA 6-2001

"THERE'S NO SUBSTITUTE FOR EXPERIENCE"

what's Happening

among INDUSTRY ASSOCIATIONS

Anders Is 1958 President Of Permian Basin Oil Show

Arno Anders, Continental Oil Co., Midland, Texas, has been named president of the 1958 Permian Basin Oil Show.

Other new officers named by the board of directors are Luther Reynolds, Pan American Petroleum Corp., Andrews, Texas, and John Hostetler, consultant, Monahans, Texas, both vice presidents; and W. T. Edwards, Odessa Natural Gasoline Co., Odessa, Texas, treasurer.

Dates of the 1958 oil show have been set for October 16-19, according to Carlos Clover, general manager. The show held in Odessa every two years, attracted 154,000 visitors and 504 exhibitors in 1956.

Northern Oklahoma API Elects 1957-58 Officers

The Northern Oklahoma chapter of the American Petroleum Institute held its annual election of officers for the 1957-58 academic year recently.

Officers elected for the forthcoming year were Dick Coburn, Champlin Oil and Refining Company, Enid, Okla., chairman; L. W. Ward, Gungol & Gungol Oil, Enid, first vice chairman; Nyle Myers, National Supply Company, Perry, Okla., second vice chairman; and Laile Harris, National Supply Company, third vice chairman.

Rocky Mountain Geologists Elect Denver Officers

The Rocky Mountain Association of Geologists elected six Denver men to office for the 1958 term. Andrew G. Alpha, Signal Oil and Gas Company, is the new president.

Other officers are Daniel S. Turner, first vice president, Dan Turner & Associates, consulting geologists; H. H. R. Sharkey, second vice president, Carter Oil Company; Joseph B. (Bill) Headley, secretary-treasurer, Southwood Exploration Co., Inc.; F. A. (Gus) Thurman, councillor, Thurman Consultants; and William A. (Bill) Newton, councillor, consulting geologist.

Top Officers of the Houston chapter of API are left to right B. O. Ellington, R. M. Darling, Thomas Pennington and W. W. Fore, Jr.

Houston Chapter API Installs 1958 Officers

Houston chapter of API has installed its 1958 officers. Chairman is Thomas (Tucker) Pennington, Humble Oil & Refining Co. R. M. Darling of Pan American Petroleum Co. and B. O. Ellington of Baker Oil Tools, Inc., are first and second vice chairmen respectively. Secretary-treasurer will be E. W. Fore, Jr., of Parkersburg Rig & Reel Co.

Elected as advisors were Roy A. Bobo of Phillips Petroleum Co., H. M. Krause of Humble Oil, W. H. Rosser of Continental Oil Co., Phillip Davis of Magnolia Petroleum Co., W. M. Paggi of Sun Oil Co., J. B. Fleming of Welex Jet Services, Fred Chisholm of Magnet Cove Barium Corp., Richard Dobson of Shell Oil Co., Joe Battle of The Texas Co., George Justice of HOMCO, Herb Treichler of H.E.T. Drilling Co., Whitt Daniels of John Mecom's interests, and J. B. Butler of Oil Production Maintenance Co.

J. L. Wilson of Atlantic Refining Co. is program chairman and Rex Galloup of Edwards Valve Co. is membership chairman. E. J. Slavinsky of Gulf Oil Corp. is in charge of arrangements, and A. W. Short of Reed Roller Bit Co. is in charge of entertainment.

Gulf Oil Vice President To Speak at AIME Meet

The Society of Petroleum Engineers of the American Institute of Mining, Metallurgical and Petroleum Engineers, has announced a comprehensive program for its technical and economic sessions at the AIME annual meeting in New York, Feb. 16-20, 1958.

Ralph O. Rhodes, senior vice president and a director of Gulf Oil Corporation will be the speaker at the Society's annual dinner the evening of Feb. 18. This event will be at the Statler Hotel, where the Society's program of papers will be presented.

Dr. Carlos Perez de la Cava, of Venezuelan Embassy in Washington and minister for petroleum affairs, will have a paper on "The Oil Industry in Venezuela—Its Strategic and Economic Significance."

Many other papers will be presented.

Houston NOMADS Elect Officers

The new Houston NOMAD officers for 1958 are shown left to right (bottom row): W. O. Hedrick, Glaze-Hedrick Mfg. Co., senior regent; B. H. Pickard, Tuboscope, vice president; Ed Louden, Baroid Division, president; Tracey Word, Jr., Thornhill-Craver Co., junior regent; Harry Estes, Oil Well Survey Instrument Co., executive secretary. Back row, left to right: W. H. Becker, Atlas Pipe Co., sergeant-at-arms; F. S. Mims, Mission Mfg. Co., assistant treasurer; John W. Gates, Well Equipment Mfg. Co., secretary; James B. Hughes, Hydril Co., treasurer; A. Lon Smith, Petroleum Instrument Co., assistant secretary, and W. M. Boren, Rolo Mfg. Co., deputy sergeant-at-arms.

Los Angles NOMADS Executive Changes

Outgoing and incoming officers of the Los Angeles chapter of Nomads at the January meeting. Left to right (front row): Earl M. Daniels of Hydril Company; Bob Gaylord of Wagner-Morehouse, Inc.; Bill Brooks of Byron Jackson Tools, Inc.; (back row): Harry Hester of McCullough Tool Company; Joe Schlarb of Continental-Emsco Co.; Tom Martin of R. J. Eiche & Associates; C. F. Van Loozen of Macco Corporation; Shorty Bowen of Martin-Decker Corp.; Andy Anderson of Pacific Perforating Co.; Tom Ashe of Globe Oil Tools Company; and Taylor Bannerman of Technical Oil Tool Company. Not shown are Ben Hilliard of Web Wilson, Inc.; Ben Reinhold of Abegg & Reinhold Co.; and Knight Templeton of S. R. Bowen Company.

GREATEST ADVANCEMENT IN SWAB HISTORY!

The Oil States Swab is the most advanced swab on the market having been developed and perfected after years of research, painstaking work and engineering skill. It's acceptance has been overwhelming.

HERE ARE THE FEATURES YOU WANTED

- ★ Fewer cups to handle ANY job
- ★ NO Servicing
- ★ Responds to lightest loads
- ★ Swab can be EASILY UNLOADED at any time
- ★ Valve action from base of cup
- ★ Perfect for swabbing following frac jobs
- ★ Only 6 parts Required to Assemble a 2-Cup Swab

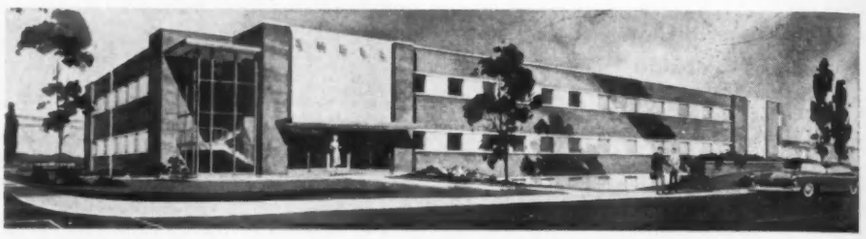
SOLD THROUGH SUPPLY STORES EVERYWHERE

(CUTAWAY)

Oil States

OIL STATES RUBBER CO.
ARLINGTON, TEXAS

COMPANIES in the News



Shell Oil's new Farmington division headquarters are now under construction. The face brick exterior will be accented with panels of cordova shell limestone.

SHELL OIL COMPANY announced plans for a $500,000 division headquarters building in Farmington, N. M. The two-story building will be ready for occupancy by August 1, 1958, according to **R. R. Robison**, manager of Shell's Farmington division. The 20,000 square-foot building, which has plan dimensions of 66 by 140 feet, will provide office space for 110 people. It is expected to house Shell's local exploration-production and pipe line staffs.

•

KIRBY PETROLEUM CO. and Houston independent **Michel T. Halbouty** have made an exploration deal to test some 8000 acres on the outer flanks of Barber's Hill dome in Chambers County. The acreage, located on all flanks of the prolific dome, has been divided into exploration blocks. A 13,500-foot Yegua test, Halbouty's No. 1 Wilborn, is drilling on one block on the north flank, a mile and a half north of nearest Yegua production. Halbouty is also conducting geophysical work on some 4000 acres in the area, at present. The arrangement calls for Halbouty to carry on a continuous exploration program of drilling or geological or geophysical work with the hope of establishing new and deeper production on the outer flanks of the dome which has given up more than 100 million barrels of oil from Miocene, Frio, Vicksburg and Yegua sands.

•

STANDARD OIL COMPANY OF CALIFORNIA revealed it has purchased five lots totalling approximately 50,000 square feet in the 500 block on Market between Second and Ecker Streets in San Francisco as a possible site for future construction of an office building. Total purchase price was not announced. Principal company offices now occupy all or part of 225 Bush, 130 Sutter, 200 Bush and the new Cahill Building at Pine and Market.

•

RIMROCK TIDELANDS, INC., has entered into foreign operations. Purchase of **MOFAG OIL EXPLORATION COMPANY, INC.**, a Swiss corporation which owns oil exploration concessions in Switzerland and France, and the appointment of **Joseph L. Hargrove** to direct Rimrock's foreign operations were reported simultaneously. Besides two Swiss concessions, Mofag owns one-third interest in a 500,000-acre concession in the Aquitaine Basin, located some 85 miles northeast of Bor-

CUT STUCK SAND LINES INSIDE TUBING

KINLEY SAND LINE CUTTER

M. M. Kinley Company, Licensees

ABILENE, TEXAS
Hudson-Eads, Inc. ..... OR 2-5331
BAY CITY, TEXAS
J. P. Graham ..... CI 5-4526
BEAUMONT, TEXAS
Assoc. Eng. & Eqpt., Inc. .... TE 5-7046, ZF 8-2023
CASPER, WYOMING
C. A. White 3-5264
GLENDIVE, MONTANA
C. A. White ..... EM 5-3833
HOBBS, NEW MEXICO
Horne Well Service Co. 3-5396
HOUSTON, TEXAS
Assoc. Eng. & Eqpt., Inc. ..... CA 5-1103
KILGORE, TEXAS
Davis-Kemp Tool Co., Inc. 5541
LAFAYETTE, LOUISIANA
Assoc. Eng. & Eqpt., Inc. ..... CE 5-6770
LIBERAL, KANSAS
Rainbo Service ..... Main 4-3598
LINDSAY, OKLAHOMA
Rainbo Service Co. 530
MIDLAND, TEXAS
Lucceus Service & Eqpt. Co. ..... MU 2-1631
NEW ORLEANS, LOUISIANA
Assoc. Eng. & Eqpt., Inc. ..... VE 5-4983
OKLAHOMA CITY, OKLAHOMA
Rainbo Service Co. ..... ME 4-2131, ME 4-0105
WHITTIER, CALIFORNIA
Kline Wire Line Co. ..... OX 9-2731
WICHITA FALLS, TEXAS
Hudson-Eads, Inc. 2-3767, 2-8584, 3-4690

deaux. The 2½-year-old Zurich, Switzerland-based firm also recently conducted five exploratory drilling tests in Italy. With the purchase of Mofag by Rimrock Tidelands, **H. L. Rowley,** president of Rimrock, was elected a director of the Swiss company. Other directors include **Dr. Paul Gmur,** president, who will retain offices in Zurich; **E. L. Keller, H. R. Schwarzenbach** and **Robert Gugelmann,** all of whom are Swiss nationals.

•

PRODUCING PROPERTIES, INC., announced the acquisition of the interest of **Jack Woodward,** et al, Dallas, in the East Washington field, McClain County, Okla. The transaction which involved approximately $2,000,000 included a majority interest in the entire field made up of seven wells on five leases covering 360 acres, together with a natural gasoline plant. Producing Properties, Inc., will take over the operation of the field effective immediately.

•

KIN-ARK OIL COMPANY of El Dorado, Ark., has established its Exploration department in Shreveport, La. The home office will remain in El Dorado. The shift from El Dorado will include **R. P. Evans,** vice president in charge of exploration, **H. Fred Futch,** landman, and **Bill M. McLarry,** geologist.

•

FORTUNE PETROLEUM CORPORATION'S President **Napoleon J. Daigle,** has announced the termination of a joint operating agreement formerly held between his firm and **OPERATORS CONSOLIDATED MINES COMPANY,** with Fortune the surviving operator. The former pact involved drilling operations on certain portions of Fortune's 320-acre Bradley lease in Santa Barbara County, California. New joint venture arrangements have been completed with an experienced group of associates, according to Daigle. Under the new agreement, Fortune has full authority to develop the property. Having recently completed a sixth producing well, the company is now engaged in re-working one of the earlier wells, Daigle states. **Cecil O. Basenberg,** independent petroleum engineer, with Casner & Bentz, Bakersfield, Calif., are now the drilling contractors. According to Daigle, the recent prospect of litigation between Fortune and Operators Consolidated is now amicably settled by the agreed termination of the pact between the two firms.

•

WESTERN OFFSHORE DRILLING AND EXPLORATION COMPANY, a subsidiary of **HANEY AND WILLIAMS DRILLING COMPANY** was awarded the contract to drill **STANDARD OIL COMPANY OF CALIFORNIA-HUMBLE OIL & REFINING COMPANY'S** offshore wells. The joint Standard-Humble lease is located in the coastal waters south of Santa Barbara and amounts to 5500 acres leased from the state for a bonus of $7,250,000. Standard's platform now under construction at National Steel and Shipbuilding Company in San Dego will measure 110 feet square and have its deck 50 feet above the surface of the ocean, topped by a 140-foot derrick during drilling operation and is capable of drilling two wells simultaneously and up to a total of 25 wells from a single location. When the platform is in position some time midyear, it will be about 2.2 miles offshore and south of Summerland, Calif.

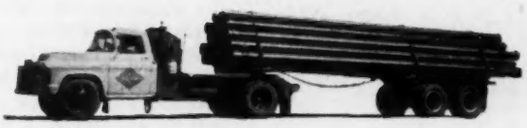
Congrats and $25 to FRANK R. SHAFFER, c/o Amerada Petroleum Co., Box 20, Hargeisa, British Somaliland, Africa.

"Here to case the joint."

Joe Roughneck doesn't need a detective to tell him that Lone Star API quality casing, tubing and line pipe represents long service and top value.

Every length of Lone Star pipe is quality controlled from mine to pipe mill . . . and every length is fully normalized. The big Lone Star plant is as bright at night as in daylight . . . making fine pipe to supply Joe's needs.

Neighbor, wherever you are, specify Lone Star and we both get a good deal.



Lone Star STEEL COMPANY

EXECUTIVE-SALES OFFICES
W. Mockingbird Lane at Roper • P. O. Box 12226 • Dallas, Texas

DISTRICT SALES OFFICES
Houston, Texas | Midland, Texas | Dallas, Texas
Tulsa, Oklahoma | Wichita Falls, Texas | Shreveport, La.

What's Happening

among SERVICE and SUPPLY MEN

Floyd C. Myers

L. L. Laurence

Black, Sivalls & Bryson has announced the election of three new vice presidents. **Floyd C. Myers,** manager of sales and service, Oil Field Equipment division, Oklahoma City, was elected vice president and manager of oil field sales. Myers, a BS&B'er for 28 years, was named manager of oil field sales and service in 1954. **Lawton L. Laurence**, manager of engineering, Oil Field Equipment division, Oklahoma City, was elected engineering vice president of BS&B and will serve in a staff capacity. Laurence began his career with BS&B in 1941. In 1954 he was named to his present position of manager of engineering. **William F. Gates,** director of purchases, with offices in Kansas City, Mo., was elected purchasing vice president, and will serve in a staff capacity. Gates has 31 years of service with BS&B, starting out in Oklahoma City in 1926 as purchasing agent.

William F. Gates

•

Donald P. Ruhl, United States Steel Corporation Oil Well Supply division field representative at Farmington, N. M., was transferred to Blanding, Utah. Ruhl was employed in 1955 at Fort Morgan, Colo., and worked for Oilwell at this location and at Casper, Wyo., and Farmington prior to his present appointment.

•

Vernon Mitchell, export representative of Security Engineering Division, one of the Dresser Industries, has returned to the U. S. after seven months visiting active centers of oil exploration and production. Purpose of Mitchell's trip—which took him through Japan, Formosa, the Philippines, Thailand, Burma, Borneo, Java, Sumatra, New Guinea, Pakistan, Iran, Iraq, Lebanon, Turkey, Libya and England—was to study drilling requirements in these areas as related to research, production and sales activities of Security's three manufacturing plants in Dallas, Manchester, England, and Whittier, Calif.

•

W. H. Leo has been appointed manager of sales at **Sheffield Division, Armco Steel Corporation's** Houston Plant. Leo succeeds **R. W. Davison,** who has been promoted to director of sales planning and coordination at Armco's headquarters in Middletown, Ohio. During the past five months, Leo has been on leave from his position as manager of sales for construction products in Kansas City to serve as director of the Iron and Steel division of the Business and Defense Services Administration.

•

Burleigh Bozant has been promoted to vice president and assistant general manager of **OTM Corporation.**

•

Technical Oil Tool Corporation, announced that **J. Phillip (Phil) Fouche** has recently rejoined the sales and service staff in the Abilene-Sweetwater area. For the past two years Fouche has been in the pipe business. For five years prior to that, he was with Totco. In his new assignment Fouche will headquarter at Abilene, Texas, and will operate under the direction of **Hugh Weathersby,** Totco West Texas division manager.

J. Phillip Fouche

•

Jim Plemmons, was appointed manager of **Cardwell Manufacturing Company's** Oklahoma City store. Flemmons was formerly in the Sales division of Republic Supply Company. In his new position with Cardwell he will devote a major portion of his time in the field investigating needs of the operators.

•

McNamar Boiler and Tank Company has announced the appointment of **Fred C. Catron** as manager of the Special Sales division for the company and **William J. Williams** as sales representative for McNamar's new sales offices in Houston. Catron has been with McNamar six years and was previously associated with the National Tank Company for two years. He has been connected with the fabricating industry for some time. Before his appointment with McNamar, Williams was district manager, Carillon sales, for Stromberg-Carlson in Rochester, N. Y.

•

Louis J. Smith has been appointed vice president and sales manager of **Chiksan Company** and **Chiksan of Canada Ltd.** and **Edward T. Landgraff** has been made vice president and sales manager of **Chiksan Export Company.** Smith, who joined Chiksan in 1948 and has been Eastern regional sales manager since 1951, will make his headquarters at Chiksan's main office and plant in Brea, Calif. Landgraff has been with Chiksan since 1946 and has been export sales manager since 1954. He will continue to headquarter at the Company's Newark, N. J., office. Replacing Smith as Eastern regional sales manager is **John F. Powers, Jr.,** formerly senior field engineer. The changes in Chiksan's Sales department were made as a result of the resignation of **G. R. Winder** as vice president and general sales manager of Chiksan and its two subsidiary companies. Winder left to become associated with the Ohio Injector Company as vice president of marketing.

•

James L. Turner, field representative for **Ajax Gas and Oil Engines and Pumps,** has been transferred by Ajax Iron Works from the Illinois basin to Calgary, Alberta, Canada from where he will cover the western Canada fields. Prior to becoming associated with Ajax two years ago as a field representative, he had served in many field capacities in various eastern oil producing areas.

•

Mid-Continent Supply Co. recently promoted two executives in Fort Worth. New general office and personnel manager is **J. P. Jones** and new assistant general manager of sales is **J. H. Kenyon.** Jones, former assistant to general division manager, is a veteran of 16 years service with Mid-Continent. Kenyon, who is a veteran of ten years service with Mid-Continent, formerly was in the Machinery division.

•

William R. Cook has been appointed wire mill superintendent of the Buffalo plant of the Wickwire Spencer Steel Division of **The Colorado Fuel & Iron Corporation.** Before joining CF&I, Cook had been associated with Union Wire Rope Corporation of Kansas City, Mo., as assistant wire mill superintendent.

•

W. C. Schumacher has been elected an executive vice president and member of the board of directors of **International Harvester Company.** He formerly served as a vice president of the company and executive head of its Motor Truck division. Schumacher has been a member of International Harvester Company since 1917. He joined the company at Jacksonville, Fla., as a warehouseman and held a number of sales and office positions there before being transferred to New Orleans

in 1925 as assistant district sales manager. In 1926, Schumacher was named manager of the New Orleans district. Schumacher was named general manager of the Motor Truck division in 1946. In 1953, he was elected a vice president of the company and continued as executive head of the Motor Truck division.

•

E. L. McCarthy has been named manager of oil field engineering for Black, Sivalls & Bryson, Inc. McCarthy will head BS & B's oil field engineering staff, headquartered in Oklahoma City. McCarthy joined BS & B in late 1949. Serving through the years as research engineer, engineering section head, assistant chief engineer and administrative engineer, McCarthy in 1955, was appointed administrative assistant to the manager of the Oil Field equipment division. In his new post, McCarthy succeeds Lawton L. Laurence, recently elected engineering vice president.

E. L. McCarthy

•

Walter H. Cox has been advanced to sales manager of **Hercules Tool Company.** Cox joined Hercules Tool in 1955 as city salesman, calling on the oil and supply company offices in Tulsa, Oklahoma City and Bartlesville. Since late in 1956 he has worked as a special representative on various assignments, in addition to city sales.

•

B. E. Irby has been appointed local store manager of the **Jones & Laughlin Supply Division** store at Longview, Texas. Irby, previously manager of the Gladewater store, joined J & L in 1954. He was appointed manager at Gladewater in 1956.

•

Robert G. Allen has been elected executive vice president of **Bucyrus-Erie Co.** Allen joined Bucyrus-Erie last July as a vice president. In August, he was appointed executive assistant to the president and placed in charge of all manufacturing operations. Before coming to Bucyrus-Erie, Allen had been president of the Pesco Products and Wooster divisions of the Borg-Warner Corp. at Bedford and Wooster, Ohio.

•

W. P. Bell was appointed manager of Industries Group sales in the Washington, D. C., office of **Allis-Chalmers.** Bell had been manager of national defense sales for the group in the Washington office for the last year and prior to that a sales representative there since 1946.

•

B. F. Fahey, Jr., has been appointed assistant sales manager of **Southern Engine & Pump Company.** Prior to his present association he was with A. M. Lockett & Co., Ltd., as an application engineer and a sales engineer. Fahey gained actual shop experience when he was employed for a period by Parkersburg Rig and Reel Co., as a plant workman.

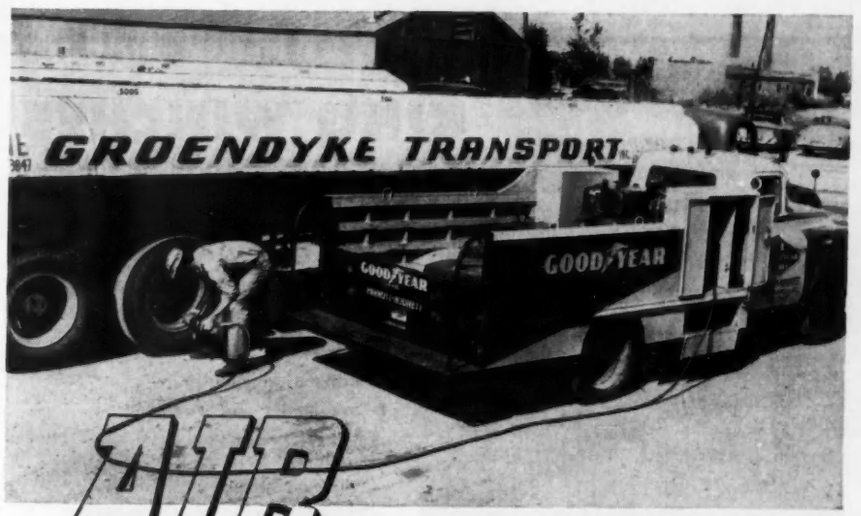
•

Dresser Industries, Inc., announced six executive promotions. Heading the list, **R. E. Reimer** was elevated to executive vice president and will also continue to serve as Dresser's treasurer. **John Lawrence** was also named as an executive vice president. **Thomas L. Moody** was appointed vice president in charge of industrial relations. **J. Douglas Mayson** succeeded Reimer as secretary, and **Cecil C. Hill** and **Paul E. Brodrick** were made assistant treasurers.

John C. Helies

Henry L. Sisk

Security Engineering Division has announced two executive staff appointments. Newly-appointed executive vice president, covering all Security activities except sales,



AIR . . . when and where wanted . . . delivered by . . .

WISCONSIN-POWERED

Mobile Compressor Unit

The large capacity truck-mounted compressor unit shown in the illustration servicing a tank truck, provides on-the-job AIR SERVICE for inflating tires, operating air wrenches and a complete line of pneumatic tools commonly used in oil field and pipe line operations.

In localities where newly developed oil pools are served by mobile tanks until definite capacity appraisals have been determined, as well as in oil fields now served exclusively by tank trucks . . . Wisconsin-powered mobile compressor units are *essential equipment.*

Parrott-Hodnett of Wichita and Hutchinson, Kansas, have built up their own unit which fits exactly the available space in their service car as shown here. A Model VF4 Wisconsin Heavy-Duty Air-Cooled Power Unit is direct-connected to a Quincy air compressor and the owner may also add a high pressure pump to this installation for injecting aqueous solutions of calcium chloride.

Again, Wisconsin heavy-duty engine power *fits the job and the equipment* to the best possible advantage. The user is sure of unfailing dependability, low cost maintenance and heavy-duty HIGH TORQUE Performance . . . backed by *fast service* whenever needed.

WISCONSIN MOTOR Corporation
MILWAUKEE 46, WISCONSIN
World's Largest Builders of Heavy-Duty Air-Cooled Engines

WRITE TO HARLEY SALES CO.
619 SOUTH MAIN STREET • TULSA, OKLAHOMA
3420 McKINNEY AVENUE • HOUSTON, TEXAS
505 SOUTH MAIN STREET • WICHITA, KANSAS
OIL FIELD DISTRIBUTORS FOR WISCONSIN ENGINES AND ALL TYPES OF UTILITY UNITS

A7-6107-½-I

For more data on advertised products, use Readers' Service Cards, last page.

is **John C. Helies**, who formerly for three years was associated with Dresser Industries. His earliest business experience with the oil industry dates back 18 years. **Henry L. Sisk** has been named Security's manager of industrial relations. He, too, formerly was with Dresser, the parent company, as a staff assistant on industrial relations.

•

B. J. Travis was appointed assistant district engineer, secondary recovery sales, at Midland, Texas, for **United States Steel Corporation's** Oil Well Supply Division. Travis was employed by Oilwell in 1952 at Odessa, Texas. In 1954 he was appointed assistant district engineer, machinery and equipment sales, at Odessa. Prior to his present appointment he was employed at Odessa.

Mario Cueto, special sales representative of **Reed Roller Bit Company** in Buenos Aires, Argentina, has been appointed manager of export sales for Reed. **Howard Book**, vice president - sales, who announced the appointment, said that Cueto would transfer to New York, company export sales headquarters, Cueto joined Reed in 1940 as a salesman in Buenos Aires. He was successively district manager, special salesman and special sales representative in which capacity he represented his company in Argentina, Bolivia, Brazil, Chile, Ecuador and Peru.

Mario Cueto

•

HOMCO has announced the following transfers and promotions. **P. J. Bedford** from Brookhaven to Hattiesburg as sales and service representative. **M. R. Brenek** from E. W. S. supervisor to field maintenance engineer, Houston. **L. R. Denham** from Denver to Casper, Wyo., as city salesman. **Wm. H. Dodson, Jr.**, from Kimball, Neb., to Bay City, Texas. **B. M. English** from Casper to Denver as city salesman. **C. J. Erwin** from New Orleans to New York City as export manager. **J. E. Kerr** from assistant division manager to division manager, New Orleans. **Gerald Shoemake**, from Pearsall to Liberty, Texas. **R. C. Unger, Jr.**, from Liberty to Bay City. **M. B. Watson** from Alice to Sam Fordyce. **Roy N. Young** from Corpus Christi to Casper.

•

SKF Industries, Inc., has announced two executive appointments. **Thomas W. Dinlocker**, vice president and director, was appointed chairman of the Finance committee of the board of directors, and **William J. Wiley** was elected vice president in charge of finance. Wiley will assume direction of SKF's Financial division.

•

T. W. Martin has been named vice president of the **Weatherford Oil Tool Company.** Martin has been associated with Weatherford for six years. Starting his career as a salesman, he was general manager of Weatherford's Canadian firm from 1953 through the middle of 1955, at which time he was moved to Houston as marketing and finance manager. He was financial officer before being given the additional responsibility of assistant secretary-treasurer.

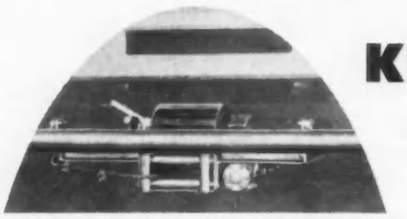
T. W. Martin

•

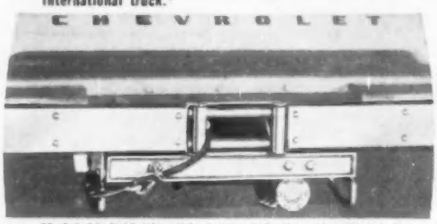
G. A. Tompson, president of **Bethlehem Supply Company**, has retired. **C. R. Zimmerman**, executive vice president of Bethlehem Supply since 1948, will succeed Thompson as president. Thompson was appointed vice president, sales and operations, of Bethlehem Supply in 1937, serving in that position until 1948, when he was elected president. Zimmerman was first employed by Bethlehem Steel in 1927 in the pipe mills of the Sparrows Point plant. He joined the Bethlehem Supply organization in 1947 as assistant to vice president, and was appointed executive vice president the following year.

•

Robert A. Forsman has been elected president of **Win-Well Manufacturing Company.** Simultaneously, the Win-Well headquarters will be moved from Los Angeles to Tulsa. Forsman succeeds **William**

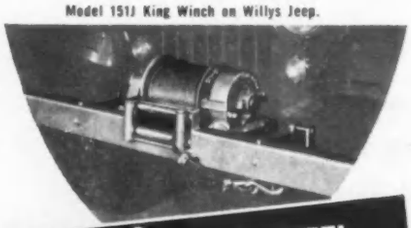


Model A-11 King Winch on A-126 (4x4) all-wheel-drive International truck.*



Model CD-8116 King Winch on 1958 Chevrolet Model 31 (4x4).

Model 151J King Winch on Willys Jeep.



KING WINCHES

. . . for Willys, International, Chevrolet, GMC, Ford, Land Rover and other vehicles

COMPLETE, READY-TO-INSTALL KING FRONT-MOUNT WINCH ASSEMBLIES FEATURE:

- winch side arms to reinforce truck frame
- bronze-bushed, 4-way cable guide rollers
- cable drum guard
- heavy-duty pipe bumper
- needle-bearing, universal-joint spline-shaft drive assembly
- Timken bearings on worm

King Winches keep you moving through the most difficult terrain . . . you get action where there's no traction with dependable pulling power. King power winches have pulling capacities of 8,000 to 19,000 lbs.

** King Winches for International trucks are available through International-Harvester dealers.*

Koenig ALL-STEEL CABS FOR JEEPS

FULL AND HALF CABS

Full Cab and Model 151J King Winch Illustrated.

Koenig Jeep cabs and King Winches for Willys vehicles are available through Willys Motors, Inc., and Willys-Overland Export Corp. distributors or dealers. Write for free descriptive literature.

KOENIG ALL-STEEL CABS HAVE THESE SUPERIOR FEATURES:

- PROTECTION
- SAFETY
- COMFORT
- CONVENIENCE

Roll-down windows, full opening . . . full panel-board head lining and masonite door lining . . . safety glass throughout . . . all-steel welded construction . . . door locks.

Koenig IRON WORKS, Inc.

WEST 12th at ELLA BLVD. P. O. BOX 7726 HOUSTON 7, TEXAS

B. Pollock who has resigned, due to other business considerations in California, which would preclude his making the move to Tulsa.

Forsman has over 15 years' experience in sales management and technical sales, and in construction, maintenance and mechanical engineering. Most recently engaged in independent producing operations, Forsman was formerly assistant chief engineer of the Refining division of the old Deep Rock Oil Corporation. Prior to his association with Deep Rock, he had been engaged in general engineering sales, after having served as assistant superintendent of compressor stations for Oklahoma Natural Gas Company in 1946 and 1947.

•

The S. M. Jones Company announced the appointment of **W. H. Ritterbusch, Jr.**, as Northern division sales manager. His territory encompasses all oil producing states north of the Red River to and including Canada. Ritterbusch joined S. M. Jones in Tulsa in 1946 and has served as manager of the Field Engineering department for the last ten years prior to his advancement. He will headquarter in Tulsa.

W. H. Ritterbusch, Jr.

•

Joe White was appointed assistant district engineer—machinery and equipment sales and service at Odessa, Texas, for **United States Steel Corporation's** Oil Well Supply division. White joined Oilwell at Odessa in 1945 as a field engineer.

•

William J. Gillingham, who joined the **Schlumberger Well Surveying Corporation** in 1934, has been named president of the firm. Gillingham has been executive vice president. This change will allow **Pierre Schlumberger** to devote full time to his duties as president of Schlumberger Limited. He had been president of Schlumberger Well Surveying since 1946 and will continue as a member of the board of directors. Gillingham joined Schlumberger in 1934. In 1948 he was assigned to Caracas, Venezuela, as vice president and general manager of Schlumberger Surrenco, S. A. He returned to Houston in 1951 as executive vice president, was named to the board of directors in 1954 and to the board of directors of Johnston Testers, Inc., in 1956.

W. J. Gillingham

•

Security Engineering Division, one of the Dresser Industries, has announced two executive staff appointments. Newly-appointed executive vice president, covering all Security activities except sales, is **John C. Helies**, who formerly for three years was associated with Dresser Industries. Helies, prior to his association with Dresser, was general manager of one of the divisions of General Electric Company.

•

Pete DeFrank has been named manager of the new Perforating Flow Laboratory at **Jet Research Center, Inc.,** at Arlington, Texas. He joined Humble Oil & Refining Co. in 1945 where he obtained wide experience in drilling, production and workover operations. During his last three years with Humble he was in charge of that company's perforating flow laboratory at Houston. DeFrank joined Welex, Inc., in 1955. He joined Jet Research Center shortly after that firm's organization in late 1955.

Baroid Division National Lead Company has announced the appointment of **William G. Bealmear** as sales representative in the Baroid Export department in Houston. Bealmear was formerly area superintendent in well logging at Corpus Christi, Texas, and has been with Baroid since 1952, serving as well logging assistant district superintendent, district superintendent and as area superintendent since 1947. Bealmear will represent both the Drilling Mud department

W. G. Bealmear

Martin-Decker helps you

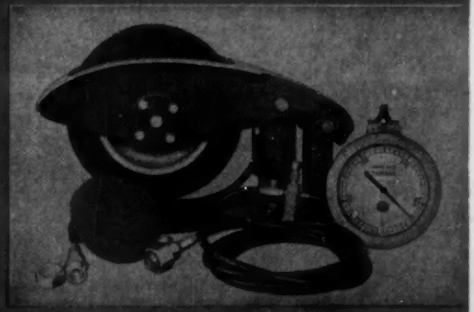
GET MORE GOOD FEET PER BIT

by eliminating out of gauge hole

Drillers everywhere are fast finding that one of their best friends is the Martin-Decker Hydro-Mech Torque Gauge. It's easy to see why. The Hydro-Mech quickly and accurately tells the driller when he has an out-of-gauge hole or locked cones. He gets maximum use from every bit, cuts out expensive reaming time —*and gets more good feet per bit.*

The Martin-Decker Hydro-Mech Is An Indispensable Aid For Drilling—Controlled Reaming—Fishing—Milling—and Diamond Coring.

- A rugged instrument of remarkable sensitivity
- Easy to read and understand
- Operates with any chain driven rotary
- Stabilizes chain and gives it longer life
- Minimizes danger of twist-offs
- Increases footage when drilling with small bits



Write For Descriptive Literature!

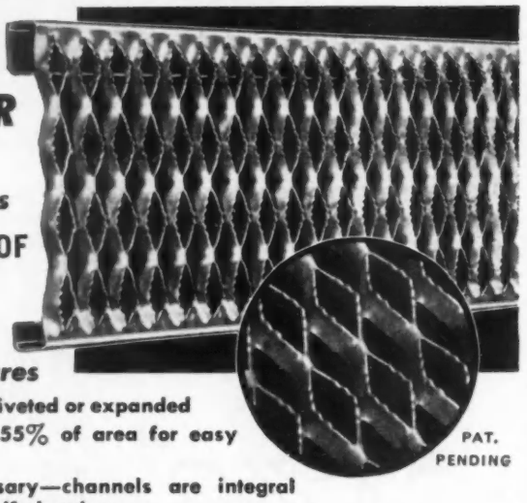
MARTIN-DECKER CORP.

HOME OF THE WEIGHT INDICATOR —— LONG BEACH, CALIFORNIA

two superior open steel
FLOOR GRATINGS
BY GLOBE

1 Safety GRIP-STRUT®

FOR MAXIMUM SAFETY ALL OVER YOUR PLANT



Important Safety Features

★ FIRE PROOF ★ SLIP PROOF
★ MAXIMUM STRENGTH
★ MINIMUM WEIGHT

Important Economy Features

★ All one piece, not welded, riveted or expanded
★ Open space in excess of 55% of area for easy access of light and air
★ No extra supports necessary—channels are integral part of the material. ★ Self cleaning
★ Cut and installed like lumber by your own maintenance force. ★ Low in original cost. ★ For balconies, no secondary sprinkler heads needed

PAT. PENDING

Ideal for work platforms, stair and ladder steps, flooring, balconies, catwalks, machinery guards, fire escapes and for original equipment safety treads.

2 GOLD NUGGET® WELDED grating

PAT. PENDING

The QUALITY GRATING for Heavy Duty Applications

★ 3/8" projection weld nugget for greater rigidity and strength
★ Vertical alignment of the main load bar assured
★ All bars are load carrying bars including secondary bars
★ Anti-skid pattern

PROJECTION WELD

Each secondary load bar (A), as projected welded to the primary load bar (B) has a shear strength of 5,000 pounds per weld. There are 28 such projection welds to a square foot of grating. This means that GOLD NUGGET Welded Grating can sustain greater shock loads than other gratings.

For the complete details of these revolutionary new gratings, write for new catalogs today. Distributors in all principal cities. Consult the yellow pages in your phone book under "GRATING".

108

PRODUCTS DIVISION

The **GLOBE** *Company* MANUFACTURERS SINCE 1914

4008 SOUTH PRINCETON AVENUE • CHICAGO 9, ILLINOIS

and the Well Logging department in foreign operations. He will coordinate the program of supplying a combination mud engineering and well logging service to foreign operators.

•

Jim Helmer

Olin McGrew

McCullough Tool Company has announced the following personnel changes in the company's sales department. **Jim Helmer,** formerly in the Logging department at the Los Angeles Headquarters office, has been appointed sales representative at McCullough's Bakersfield, Calif., branch; **Olin McGrew,** sales representative, formerly at McCullough's Kimball, Neb., branch, has been transferred to undertake sales duties in McCullough's Four Corners district, with headquarters at Durango, Colo.; and **Jim Dotson,** former serviceman at the Kimball, Neb., branch, has been promoted to the position of sales representative in the Kimball area.

Jim Dotson

•

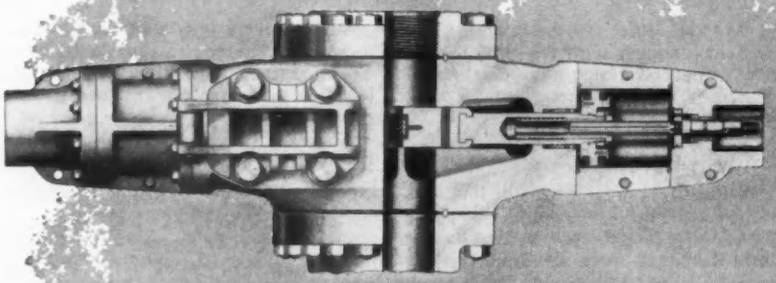
Arizona Chemical Company has named **John F. Davis** to the post of technical director. He will make his office at the company's New York headquarters, 30 Rockefeller Plaza. Davis, who has been with Cyanamid since 1949, has held a variety of research posts at the company's Stamford laboratories. More recently he has filled marketing, administrative and technical coordinating assignments in the Plastics and Resins division.

•

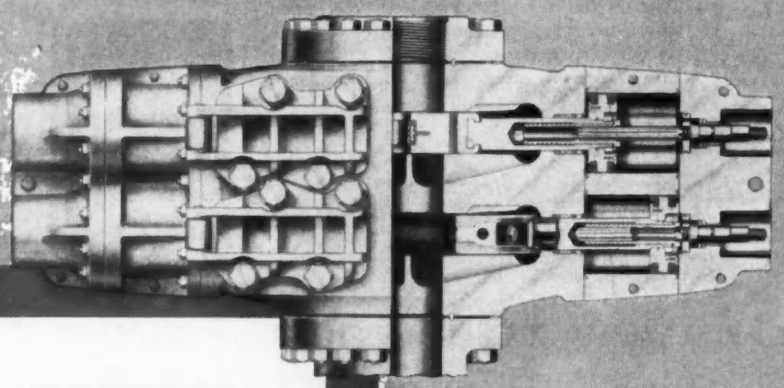
George Steven has been appointed assistant general manager of the Compressor and Engine division of **Worthington Corporation** in Buffalo, N. Y. Steven, manager of engineering at Buffalo since 1945, has been with Worthington for 31 years. **Harold W. Whiting** succeeds Steven as manager of engineering. Whiting joined Worthington in 1939 as a design engineer.

•

Baroid Division, National Lead Company has announced the appointment of **Wendell H. Russell** as area superintendent for the Texas Gulf Coast area with headquarters at Corpus Christi. Russell has been with Baroid in the Well Logging department for over 11 years and has served as superintendent in the Midland area and the Mid-Continent area before coming to the Houston general offices.



Here's the Shaffer Hydraulic SINGLE Cellar Control Gate with *Non-Rising* Locking Shafts for maximum compactness. You can use this Gate either alone, in assemblies of two or more, or in a combination hook-up with the Double Gate shown below.



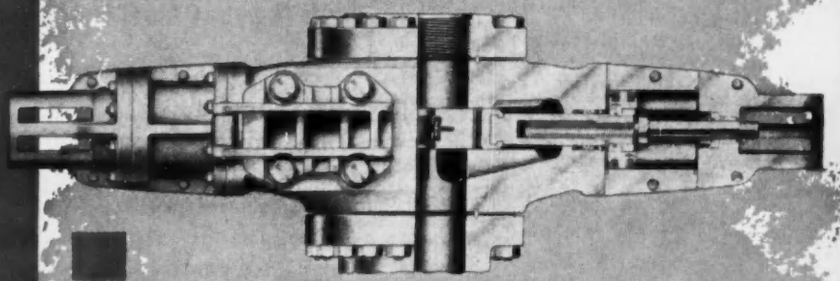
And here's the Shaffer Hydraulic DOUBLE Cellar Control Gate with *Non-Rising* Locking Shafts—the gate that unitizes *two* ram compartments into *one* compact body. Note how both the Single and Double designs have the same unique *side-opening* doors for unequalled convenience in changing rams!

SHAFFER

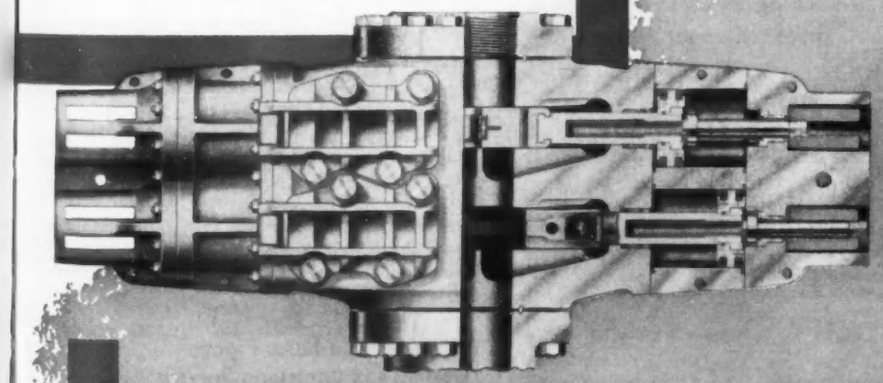
ADAPTS CELLAR CONTROL GATES TO FIT YOUR NEEDS!

Although Shaffer Hydraulic Gates incorporate the finest basic design in the industry, the design is still flexible enough to give you a choice of operating features to meet your particular *preferences.*

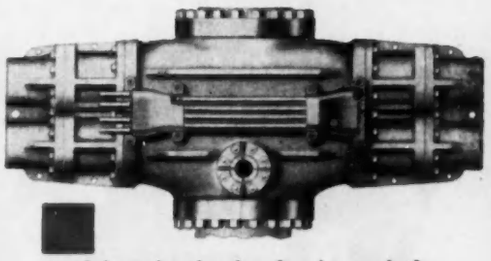
For example...



And here's the Shaffer Hydraulic SINGLE Cellar Control Gate with *Rising* Locking Shafts for maximum ease in checking ram position. It has the same advanced design as the units above—and most parts are interchangeable, size for size, thus simplifying inventory requirements.



And if you want a DOUBLE Gate with *Rising* Locking Shafts, Shaffer has that, too. All designs are Completely Enclosed...all feature Direct Drive without yokes or complicated connections between pistons and rams.



And here's the back view of the Double Gates. No matter which of the four Gate designs you select, the hydraulic manifolding is as simple and clutter-free as shown here—and they can be had with built-in outlets to eliminate spools in the hook-up.

35 years OF OIL TOOL LEADERSHIP

THIS IS ONLY PART of the complete Shaffer story on Control Gates built with you in mind. Call your nearest Shaffer representative for more facts—or write direct!

Do you have the latest Shaffer Catalog? It's free—write for it!

See the Shaffer Section of your Composite Catalog!

SHAFFER

HIGH PRESSURE DRILLING AND CONTROL EQUIPMENT • FISHING TOOLS THAT EXCEL

SHAFFER TOOL WORKS, Brea, California • California Service Shops: Santa Fe Springs and Taft
HOUSTON, TEXAS, 6006 Navigation Blvd. • ODESSA, TEXAS, 1925 West Second Street
OKLAHOMA CITY, OKLAHOMA, Shaffer Tool Works, 6201 South Shields Boulevard
FARMINGTON, NEW MEXICO, Shaffer Tool Works, Post Office Box 546
CASPER, WYOMING, Shaffer Tool Works, Post Office Box 1788
HOUMA, LOUISIANA, Shaffer Tool Works, Post Office Box 827
EXPORT SALES OFFICE, Shaffer Tool Works, 500 Fifth Avenue, New York, N. Y., U.S.A.

R. Z. Mendenhall was recently appointed sales manager of **Macco Oil Tool Co., Inc.** He was formerly with Guiberson Corporation, serving as district manager for them at Corpus Christi for the last six years. He has been associated with oil production for years, having worked in Illinois, Indiana, California, West Texas and New Mexico.

R. Z. Mendenhall

Fred Morton, formerly production and development manager with Glenn Gillespie and Sons, has been appointed vice president in charge of field operations for **Oilfield Service, Inc.**

•

Well Equipment Mfg. Corp., has announced the transfer of **I. D. Abshire,** from the North Texas area to the Rocky Mountain territory with headquarters at Casper, Wyo. **Don Wilson** will move from Casper to Wichita Falls, Texas, from where he will serve the North Texas area. As sales representatives of Well Equipment Mfg. Corp., a division of Chiksan Company, both Abshire and Wilson will be responsible for the sale of WECO unions, blocks and compounds as well as Chiksan swivel joints, steel rotary hoses and mud guns.

Denver Engineer G. L. Gore Organizes New Service Company

George L. Gore, Denver, has announced his resignation as Denver district engineer for Dowell Incorporated, to head a new service company, Select Services, Inc., with headquarters in Denver.

George L. Gore

Select Services, Inc., P. O. Box 8096, Denver 19, Colo., will serve the Rocky Mountain oil field area, offering a complete line of sub-surface surveys, including water location surveys, caliper surveys, relative permeability surveys, temperature surveys and selective acidizing control.

Gore, who is president of the new firm, had extensive experience in well stimulation and surveying procedures, and has been instrumental in the development and improvement of many oil field services. He has authored several magazine articles and has presented technical papers before API and AIME meetings.

Electro-Tech Labs to Take Over North American Geophysical Co.

Electro-Technical Labs., a division of Mandrel Industries, Inc., has acquired the North American Geophysical Company. Electro-Tech will assume complete control immediately of all former North American operations.

Recently, an office was established in Paris, France, staffed by American engineers and headed by Gene Florian, European sales manager.

Waukesha Sales & Service, Inc. To Distribute Climax Engines

Appointment of Waukesha Sales & Service, Inc., Houston, as distributor for the Climax Engine Manufacturing Co. line of gas engines has been announced.

Addition of the Climax line of gas engines ranging up to 600 horsepower will enable Waukesha to offer engines for services requiring power capacities intermediate between the ratings of many of its existing models. As a result, the company will have complete coverage in a power range up to approximately 1200 hp.

Milwhite Mud Sales Places Grand 33 in Louisiana Service

The Milwhite Mud Sales Company has recently placed in service a 118-foot vessel, the "M/V Grand 33," for delivery of drilling mud material in bulk to offshore drilling locations anywhere in the southeast Louisiana area.

Based at New Orleans, the Grand 33 can transport up to 200 tons of bulk mud weight material, as well as 2000 100-pound sacks on deck, at an approximate speed of ten miles per hour. The bulk material can be delivered to a drilling

Fastest WAY TO PAYOFF

in anything but hot fudge sundae

In all but the "ice cream jobs", driltrol drillable wing stabilizers let you put more weight on the bit for faster, controlled penetration. And, if washover is necessary, you count the time in *minutes* instead of hours! Even the *easy* jobs go faster with driltrol!

More than 25,000 of these stabilizers have *speeded* drilling all over the globe; *controlled* drilling as fulcrums, hole straighteners, key seat guides, and preventatives for pressure differential sticking. Sized to fit your job, priced at about half the cost of a single drill bit!

24 hour service, 7 days a week including *Sundaes!*

WYOMING
Casper — 3-3360
LOUISIANA
Lafayette — CE 4-2137
OKLAHOMA
Oklahoma City — ME 7-3325
CALIFORNIA
Ventura — MI 3-4366
Long Beach — GA 4-0461
Bakersfield — FA 5-6608
TEXAS
Houston — OL 4-4871
Dickinson — 8-4421
CANADA
Edmonton — 390-223, 3-6160
Calgary — AM 2-5331, CH 3-6651
EXPORT
New York — CI 6-0970
Los Angeles — RI 9-8513

driltrol 1361 East Hill Street • Long Beach, California

rig's tanks through the vessel's lightweight 250-foot hose at the rate of 100 tons per hour.

The new J. P. Ratigan, Inc., plant will manufacture a complete line of blowout preventers, stuffing boxes, wire line clamps, wrenches and tongs.

J. P. Ratigan, Inc., Transfers Into Modern Los Angeles Plant

J. P. Ratigan, Inc., has moved to a new, larger plant in the Monterey Park industrial tract in Los Angeles.

James P. Ratigan, founder and president of the company, says that in addition to larger manufacturing facilities and larger, modern offices, the new plant will also have increased warehouse capacity, where adequate stocks will be maintained for immediate shipment to the oil-producing areas throughout the world.

BS&B to Sell Oil Field Equipment Patented by Shell Development

Black, Sivalls & Bryson, Inc., has been licensed to build and sell oil field lease automation systems under patents held by the Shell Development Company, subsidiary of Shell Oil Company. In addition, arrangements have been completed for the transmittal to Black, Sivalls & Bryson all of Shell's technical information pertaining to oil field automation systems.

Both companies have been active for years in the development and research of oil well lease automation, which provides automatic control and remote operation of oil and gas producing fields.

The information and rights acquired by Black, Sivalls & Bryson include development work accumulated by Shell over many years in this field. This includes automatic control of well production, automatic well testing to determine the production of individual wells and automatic custody transfer of the production to the pipe line.

Black, Sivalls & Bryson has invested substantial sums for research and development in this field over several years and has several patents of its own as well as applications pending for others. Early last year the company introduced the first fully automatic lease system commercially available from one manufacturer.

New Wire Line Service Company Formed; Called Welex, Inc.

A new wire line service company, Welex, Inc., with general offices and manufacturing facilities in Fort Worth, Texas, has been formed from the combined assets and personnel of the former Welex Jet Services, Inc., and the Electrical Well Services department of Halliburton Oil Well Cementing Company. Officers of the local firm are: Ray O. Shaffer, president; J. B. Vaughan, vice president—sales; Tom E. Morton, vice president—operations; T. W. Painter, vice president—manufacturing and administration; and H. T. Jarmon, secretary-treasurer.

The new company was formed to provide better and more complete wire line services to oil operators and producers.

U. S. Industries Plans to Acquire Oil Field Company in Venezuela

U. S. Industries, Inc., has made arrangements to acquire the assets of Oil Field Sales & Service, S.A., a Venezuelan corporation which distributes and services a wide line of oil field equipment and tools in Venezuela and Colombia.

The purchase price for Oil Field Sales & Service will be around $585,000, Snyder revealed. It consists of 39,506 shares of USI common stock, with the balance to be paid in cash over a period of years out of future profits of Oil Field Sales & Service.

Schlumberger Moves District From Buras to Venice, La.

To further facilitate service in inland areas, the Schlumberger Well Surveying Corporation has moved a Louisiana Motor Vessel district from Buras to Venice, La. Manager of the District is H. H. Ham.

Kelco Products Appoints Ideco Export Sales Representative

Ideco, Inc., one of the Dresser Industries, has been appointed exclusive export representative for Kelco catheads and

WHEELING
COUPLINGS
FOR OIL COUNTRY USE
LINE PIPE COUPLINGS A.P.I.
⅛" to 12"—Seamless and Special Processed—Black or Galvanized
PLAIN TUBING COUPLINGS A.P.I.
1" to 4"—Seamless
EXTERNAL UPSET TUBING COUPLINGS A.P.I.
¾" to 3½"—Seamless
CASING COUPLINGS A.P.I.
4½" to 13⅜"—Long or Short
HYDRAULIC COUPLINGS
⅛" to 4"—Seamless
REAMED AND DRIFTED A.I.S.I.
¾" to 12"—Seamless
DRIVE PIPE COUPLINGS
6" to 12"—Seamless
Sales Offices in Leading Cities
Baltimore, Md.—James W. Frankhanel, 2301 N. Charles St.
Chicago, Ill.—Harry A. Jay, Suite 1090, Old Colony Bldg.
Denver, Colo.—W. G. Cline & Co., 4500 Kalamath
Detroit, Mich.—R. W. Lang, Jr., 505 Park Avenue
Erie, Pa.—R. J. Maggi, Box 711
Falmouth, Mass.—Walter S. Bennett, 53 Minot St.
Grand Rapids, Mich.—R. W. Lang, Jr., 138 Burton SE
Houston, Tex.—Henry H. Paris Distributor, Inc., Box 932
Independence, Mo.—Craig A. Fross, 3701 Norwood
Los Angeles, Cal.—James A. Riordan Co., 1400 Santa Fe Ave.
Louisville, Kentucky—Sid Schultze Co., 849 So. 6th St.
Milwaukee, Wisconsin—W. G. Nelson Co., 3347 N. 97th St.
Narberth, Pa.—J. W. Worthington, 105 Forrest Ave.
Newark, N. J.—Ira L. Rothenberg & Assocs., 398 Market St.
New York, N. Y.—Max Rothenberg, 11-05 38th Ave., Long Island City
Omaha, Nebraska—Wm. Freiden, Central States Engineering & Sales Co., 5101 Blondo St.
Oswego, N. Y.—Northeastern Associates, Neil Chatterton, Secy., P. O. Box 284
Portland, Ore.—J. G. Beard Co., 1233 NW 12th Ave.
Richmond, Va.—P. C. Abbott & Co., 15 E. Franklin St.
St. Louis, Mo.—Walter C. Dollinger Co., 4869 Goodfellow Ave.
Salt Lake City, Utah—Lovell Company, 29 E. 2nd St. South
Seattle, Wash.—Ashe & Jones, 819 Thomas St.
Wheeling Factory Phone: CEdar 2-0175
TOP QUALITY Since 1918
WHEELING MACHINE PRODUCTS COMPANY
WHEELING, WEST VIRGINIA
Factories at WHEELING, W. VA. and WOODLAKE, CALIFORNIA

For more data on advertised products, use Readers' Service Cards, last page.

Better, More Complete Than Ever

The 22nd edition of the COMPOSITE CATALOG is more useful, more complete than ever before. Here's what you'll find in these three volumes:

5,530 PAGES OF EQUIPMENT INFORMATION

INDEXED AND CROSS-INDEXED

DETAILED DATA ON EVERY TYPE OF OIL FIELD EQUIPMENT

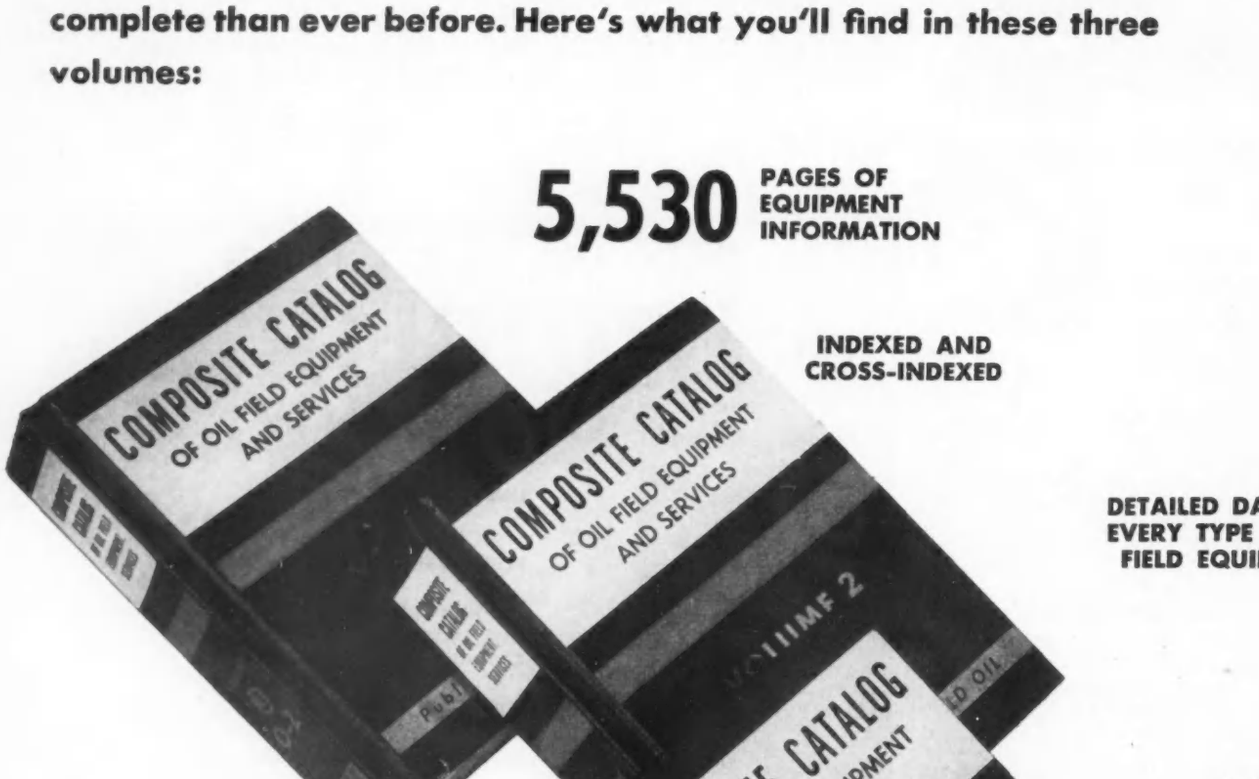
IT'S UP TO DATE

515 INDIVIDUAL COMPANY CATALOGS

QUICKEST SOURCE OF INFORMATION

USED ALL OVER THE WORLD BY OIL MEN WHO BUY AND SPECIFY

THE LARGEST AND MOST COMPLETE COMPOSITE CATALOG EVER PUBLISHED FOR THIS INDUSTRY



THE COMPOSITE CATALOG

PUBLISHED BY WORLD OIL

Box 2608 Houston 1, Texas

A-1 Bit & Tool Company
A 3 Products
ACF Industries, Inc., W-K-M
Abegg & Reinhold Co.
Acme Oil Tool Co.
Acme Patent Development Co.
Acme Regulator Co., Inc.
Advance Oil Tool Co.
Aeroquip Corp.
The Aerotec Corp.
Aetna Ball and Roller Bearing Co.
Ajax Iron Works
Alamo Iron Works
Alco Products, Inc.
The Aldrich Pump Co.
Alemite Division of Stewart-Warner Corp.
Allis-Chalmers
Allis-Chalmers, Buda Division
Alten Foundry & Machine Works, Inc.
American Blower Division
American Chain & Cable Co., Inc.
American Coldset Corp.
American Hoist & Derrick Co.
American Iron and Machine Works Co.
American Manufacturing Co. of Texas
American Pipe & Steel Corp.
American Recording Chart Co.
American-Standard, American Blower Division
American Steel & Wire Division, U. S. Steel
George Angus & Co. Ltd.
Athol Machine & Foundry Co.
Audley Engineering Co. Ltd.
Axelson Manufacturing Co.
Aztec Manufacturing Co.
B and W Inc.
Baash-Ross Tool Co.
Baker Oil Tools, Inc.
Barco Manufacturing Co.
Barnes Manufacturing Co.
Baroid Division, National Lead Co.
Baylor Company, Inc.
J. B. Beaird Co., Inc.
Beaver Pipe Tools, Inc.
Beck Engineering Combustion Company
Bell Corp.
Bell & Gossett Co.
Bell Rubber Co.
Bethlehem Steel Co.
Bethlehem Supply Co.
Bettis Corp.
Bettis Rubber Co.
Big Four Machine & Supply Co.
Billings & Spencer Co.
Black, Sivalls & Bryson, Inc.
Thomas Boorn & Co., Limited
Borg-Warner Corp.
S. R. Lowen Co.
Bowen-Itco
Bradford Motor Works
Bradford Pipe & Tool Co.
Brakesol, Inc.
The Brewster Co., Inc.
Broderick & Bascom Rope Co.
Harold Brown Co.
Brown Oil Tools, Inc.
Bucyrus-Erie Co.
Buda Division, Allis-Chalmers
Bullum-Inc.
Burt Tank, Separator & Oil Treating
Butler Manufacturing Co.
Byron Jackson Tools, Inc.
Cabot Shops, Inc.
Cameo, Inc.
Cameron Iron Works, Inc.
Campbell Chain Co.
Capitol Mfg. & Supply Co.
Carbide Manufacturing Co.
Cardwell Manufacturing Co.
S. C. Carter Co., Inc.
J. Caslake Limited
Catawissa Valve & Fittings Co.
Caterpillar Tractor Co.
The Cavins Co.
Celler Machinenfabrik Gebruder Schafer
Chain Belt Co.
Champion Spark Plug Co.
A. B. Chance Co.
Chicago Pneumatic Tool Co.
Chiksan Co.
Christensen Diamond Products Co.
Clark Bros. Co.
Climax Engine & Pump Mfg. Co.
Coffing Hoist Division
Coleman Instrument Co.
Colorado Fuel and Iron Corp.
Commercial Iron Works
Construction Machinery Co.
Continental-Emsco Co.
Continental Motors Corp.
Control Specialty Corp.
Cooper-Bessemer Corp.
Fred E. Cooper, Inc.
Cosasco Division, Perfect Circle Corp.
Creighton Oil Tool Co.
Crosby-Laughlin
Crossett Chemical Co.
Cummins Sales & Service Inc.
DXD Division, Continental-Emsco Co.
Dale Co.
Daniel Orifice Fitting Co.
Davey, Paxman & Co., Ltd.
Denison Engineering Division
Derrick Light & Equipment Co.
Detroit Diesel Engine Division
The Dia-Log Co.
Diamond Bit and Coring Co.
Diamond Chain Co., Inc.
Diamond Oil Well Drilling Co.
Directo Corp.
Dixie Electroplating Co., Inc.
Dodge Manufacturing Corp.
Dollinger Corp.
Double Seal Union Co.
Dowell Incorporated
C. H. Dragert, Inc.
Dresser Industries
Drilco Oil Tools, Inc.
Drilling & Service, Inc.
Drilling Equipment Mfg. Co.
Duff-Norton Co.
The Duraflex Co.
Eason & Therolf Co.
Eastman International Co.
Eastman Oil Well Survey Co.
Edward Valves, Inc.
Eidal Manufacturing Co.
Eisenwerk Wulfel
Emsco Screen Pipe Co.
Enardo Manufacturing Co.
English Drilling Equipment Co. Ltd.
Equipment Engineers, Inc.

These leading manufacturers, suppliers and service companies have filed complete or condensed catalog data in the current edition of COMPOSITE CATALOG. When you are ready to buy, see their detailed information there.

Eureka Tool Co.
Everstick Anchor Co.
Evis Petro-Fluid Corp.
Exner-Dodge, Inc.
Exploration Equipment Co.
Failing Co.
Fairbanks, Morse & Co.
Falcon Products, Inc.
Fann Instrument Co.
Fawick Airflex Division, Fawick Corp.
Fisher Governor Co.
Flexitallic Gasket Co.
Fluid Packed Pump Co.
Food Machinery & Chemical Corp.
Ford Alexander Corp.
Foster Cathead Co.
Foxboro Co.
Franks Division, Cabot Shops, Inc.
Franks Machine Co.
Fuller Co.
Gadco Products, Inc.
Gammaloy Ltd.
Gardner-Denver Co.
Garrett Oil Tools, Inc.
Garrott Brass and Machine Co., Inc.
Gaso Pump & Burner Mfg. Co.
Gates Rubber Co.
Gearench Mfg. Co.
Gebruder Schafer
General American Transportation Corp.
General Electric Co.
Geolograph Co.
Geotex Co.
Globe Oil Tools Co.
Goodall Rubber Co., Inc.
Gorman-Rupp Co.
H. P. Gott Manufacturing Co.
Grant Oil Tool Co.
Graver Tank & Mfg. Co., Inc.
Gray Tool Co.
Griffin Oil Well Service
Grip-Tite Manufacturing Co.
Grove Valve and Regulator Co.
Guiberson Corp.
Guier Products Manufacturing Co.
Gulf Coast Machine & Supply Co.
Gulf Tool Company, Inc.
Gwilliam Co.
Hacker Machine & Supply Co.
Halliburton Oil Well Cementing Co.
Hamer Valves, Inc.
Hands-England Oilfield Equipment Ltd.
Harbison-Fischer Manufacturing Co.
Hardy-Griffin Engineering Corp.
Harries Sales & Rentals
Harrisburg Sales & Service, Inc.
Herb J. Hawthorne, Inc.
Haynes Stellite Co.
Hayward Testing Service
Hazard Wire Rope Division
Heldie's Machine Works
Heldie's Portable Pipe Service
Hendershot Tool Co.
Hercules Motor Corp.
Hercules Tool Co.
Hewitt-Robins
Hillman-Kelley
Don R. Hinderliter, Inc.
H_2Oil Engineering Corp.
Hollow Rod Sales and Service Co.
Homelite, A Division of Textron Inc.
Hopper Machine Works, Inc.
Charles N. Hough Mfg. Co.
Houston Engineers, Inc.
Houston Export Crating and Construction Co.
Houston Oil Field Material Co., Inc.
Houston Ready-Cut House Co.
Houston Well Screen Co.
Howard-Turner Machine Works
J. M. Huber Corp.
Hughes Tool Co.
Hunt Tool Co.
Hutchison Manufacturing Co.
Hycalog, Inc.
Hydraulic Pump Co.
Hydril Co.
IDECO, One of The Dresser Industries
Indian Drilling Mud Co., Inc.
Ingersoll-Rand Co.
International Harvester Co.
J & J Steel Supply Co.
J. P. Machine and Tool Co.
James Tool Co.
Jensen Brothers Manufacturing Co.
Jet-Lube, Inc.
Johns-Manville
Johnson Block Co.
Johnson-Fagg Engineering Co.
Johnston Testers, Inc.
Jones & Laughlin Steel Corp.
S. M. Jones Co.
Joy Manufacturing Co.
Justrite Manufacturing Co.
K & G Oil Tool and Service Co., Inc.
Ben F. Kelley Co., Inc.
Ken Corporation
Keystone Development Corp.
Keystone Supply Co.
Keystone Valve Corp.
Kimray, Inc.
King Oil Tools
Kingston Instrument Co. Ltd.
M. M. Kinley Co.
Kinzbach Tool Co., Inc.
Kobe, Inc.
L-K Pump Valve Co.
Lamtex Equipment Corp.
Lane-Wells Co.
Langdon Manufacturing Co.
Larkin & Co., Inc.
Larkin Packer Co., Inc.
Layne and Bowler Co.
Lebanon Steel Foundry
LeBus International Engineers, Inc.
LeBus Manufacturing Co.
LeGrand Sutcliff & Gell Ltd.
Leland Hamner Co.
LeRoi Division, Westinghouse
Leschen Wire Rope Division H. K. Porter Co., Inc
Lewis Manufacturing Co.
Liberty Manufacturing Co.
Line Scale Co., Inc.
Link-Belt Co.
R. A. Lister & Co., Ltd. and Lister-Blackstone Inc.
A. M. Lockett & Co., Ltd.
Lone Star Steel Co.
Lone Star Tool Co.
Jon R. Long Manufacturer
Lowell Wrench Co.
Lubrikup Co., Inc.
Lucey Boiler & Manufacturing Corp.
Lufkin Foundry & Machine Co.
M-C-M Machine Works
M & V Tank Co.
MacClatchie Manufacturing Co.
Macco Oil Tool Co., Inc.
Magnaflux Corp.
Magnet Cove Barium Corp.
Magnetrol Inc.
Maintenance Engineering Corp.
F. H. Maloney Co.
Maloney-Crawford
Mannesmann-Trauzl Aktiengesellschaft
Marine Products Co.
Clayton Mark & Co.
Marlow Pumps
Marman Products Co. Inc.
Marsh Instrument Co.
Martin-Decker Corp.
John N. Martin, Manufacturer
Marvel Engineering Co.
Mason-Neilan
C. A. Mathey Machine Works, Inc.
Mattco, Inc.
Mayhew Supply Co., Inc.
McClinton Tool Co.
McCord Corp.
McCullough Tool Co.
McEvoy Co.
McFarland Engineering & Pump Co.
McFarland Manufacturing Corp.
McGaffey Taylor Corp.
McKissick Products Corp.
Henry Meadows Limited
Medearis Oil Well Supply Corp.
Mercoid Corp.
Merla Tool Corp.
Mexia Tubing Rotator Co.
Mid-Co Hard Banding Co.
Mid-Continent Supply Co.
Miller Sand Pump Co.
Mine Safety Appliances Co.
Minneapolis-Moline Co.
Mission Manufacturing Co.
Mixing Equipment Co., Inc.
Monarch Engineering Corp.
Moon Manufacturing Co.
Lee C. Moore Corp.
Morse Chain Co.
Mud Control Laboratories, Inc.
Frank W. Murphy
Murphy Diesel Co.
Murray Rubber Co.
W. C. Nabors Co.
National Lead Co.
National Supply Co.
National Tank Co.
Naylor Pipe Co.
J. B. Nelson
New Deal Specialty Co., Inc.
Newman, Hender & Co., Ltd.
New York Air Brake Co.
New York Belting & Packing Co.
Niagara Screens (Great Britain) Ltd.
Nordberg Mfg. Co.
Nordstrom Valve Division
W. C. Norris, Manufacturer, Inc.
O & M Manufacturing Co.
Walter O'Bannon Companies
Odex Engineering Co.
Oil Center Tool Co.
Oil Country Equipment Co., Inc.
Oilfield Machine & Supply Co.
Oil Metering and Processing Equipment Co.
Oil States Rubber Co.
Oil Tool Manufacturing Co.
Oil Well Manufacturing Corp.
Oil Well Supply Division
D. W. Onan & Sons Inc.
Orbit Valve Co.
Oster Manufacturing Co.
Otis Pressure Control, Inc.
Overstrom & Sons
P & S Engineering Co.
Pacific Pumps
Page Oil Tools, Inc.
Paramount Equipment Co., Inc.
Parkersburg-Aetna Corp.
Parkersburg Rig & Reel Co.
Partlow Corp.
Patterson Steel Co.
Paxman, Davey & Co., Ltd.
Payne Manufacturing Co.
Peerless Manufacturing Co.
Peerless Pump Division
Perfect Circle Corp.
Perforating Guns Atlas Corp.
Petroleum Equipment Co. Ltd.
Petroleum Instrument Co.
Petroleum Machine Co.
Petroleum Mechanical Development Co.
Petroleum Specialty Co., Inc.
Petrolite Corp., Tretolite Co. Division
Piling & Construction Co. Ltd.
Pioneer Specialties, Inc.
Pittsburgh-Des Moines Steel Co.
Pittsburgh Equitable Meter Division
Pittsburgh Pipe and Coupling Co.
Pittsburgh Steel Co.
Poole Foundry & Machine Co.
Port Houston Iron Works, Inc.
Portable Bridge and Equipment Co.
Portadrill Division H. K. Porter Co., Inc.
Porto Pump, Inc.
Pressure Services, Inc.
Quincy Compressor Co.
R-P & C Valve Division
J. P. Ratigan, Inc.
Rector Well Equipment Co., Inc.
Reda Pump Co.
Reddaway Brake Lining Division
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Sid Richardson Development Co.
"Rig-A-Lite" Co.
Rig Engineers & Fabricators Co., Inc.
Robinson Orifice Fitting Co.
Rockford Clutch Division
Rockwell Manufacturing Co.
Rolls-Royce Limited, Oil Engine Division
Rollway Bearing Co., Inc.
Rolo Manufacturing Co.
Rotary Oil Tool Co.
Ruston & Hornsby Ltd.
S & R Tool and Supply Co.
Salt Water Control, Inc.
Sargent Engineering Corp.
Saunders Brothers
Schlumberger Well Surveying Corp.
Schoeller-Bleckmann Steelworks Ltd.
Schramm, Inc.
Security Engineering
Sentinel Manufacturing Co.
Servco Co.
Shaffer Tool Works
Sillers Engineering Division
Simplex Jack Division
M. B. Skinner Co.
Skinner Brothers Co.
H. C. Smith Oil Tool Co.
Howard Smith Co.
Tyson Smith Co.
Snelling Manufacturing, Inc.
S.N.M.A.R.E.P.
Societe de Fabrication de Material de Forage
Southern Mill & Manufacturing Co.
Southwest Oilfield Products, Inc.
Spang & Co.
Spencer-Safford Loadcraft Inc.
Sperry-Sun Well Surveying Co.
Standco Brake Lining Co.
Stardrill-Keystone Co.
Staytite Co.
Sterling Packing & Gasket Co.
Stewart & Stevenson Services, Inc.
Stewart-Warner Corp.
Stewarts and Lloyds Ltd.
Joe Stine Inc.
Stone Instrument and Supply Co.
Stratoflex, Inc.
Sunset Engineering and Supply Co.
Sunshine Iron Works
Sweet Oil Well Equipment, Inc.
S. G. Taylor Chain Co., Inc.
Taylor Instrument Companies
Technical Oil Tool Corp.
Templeton, Kenly & Co.
Texas Creosoting Co.
Texas Flange Co.
Texas Gulf Tank Co.
Texas Iron Works, Inc.
Texas Tool & Machine Co., Inc.
Texsteam Corp.
Textron Inc.
Thermal Activators, Inc.
Thermix Corp.
Thermoid Co.
N. V. Motorenfabriek THOMASSEN
Thompson Tool Co.
Thornhill-Craver Co.
Timken Roller Bearing Co
Toledo Pipe Threading Machine Co.
Tretolite Co.
Tripplehorn Co.
Tri-State Oil Tool Co.
Tuboscope Co.
Tubular Lining Corp.
Tulsa Winch
Turbolite Co.
20th Century Manufacturing
Twin Disc Clutch Co.
U. S. Industries, Inc.
Unibolt Division, Thornhill-Craver Co.
Union Carbide and Carbon Corp.
Union Chain and Manufacturing Co.
Union Machine Co.
Union Tank and Supply
Union Wire Rope Corp.
Unit Rig & Equipment Co.
United States Motors Corp.
United States Rubber
United States Steel Corp.
Universal Atlas Cement Co.
Universal Packing & Gasket Co.
Varel Manufacturing Co.
Vickers, Inc., Tulsa
Victaulic Company of America
Visco Products Co., Inc.
Vortox Co.
W-K-M Manufacturing Co., Inc.
Wagner-Morehouse, Inc.
W. L. Walker Co.
Walker-Neer Manufacturing Co.
Waukesha Motor Co.
Weatherford Oil Tool Co.
Weil Controls, Inc.
Weil Equipment Mfg. Corp.
Weil Instrument Developing Co.
Weil Logging Equipment Mfg. Co.
Westinghouse Air Brake Co.
Wheeling Machine Products Co.
Wheland Co.
White Motor Co.
White-Roth Machine Corp.
Wichita Clutch Co., Inc.
Wichtex Machinery Co., Inc.
Wickwire Spencer Steel Division
Wilkinson Products Co.
J. H. Williams & Co.
Willis Oil Tool Co.
Wilson Manufacturing Co.
Web Wilson Oil Tools, Inc.
Wilson Supply Co.
Winter-Weiss Co.
Win-Weil Manufacturing Co.
Alfred Wirth & Co.
Wisconsin Motor Corp.
Witte Engine Works
Woodfield Hoist & Associated Industries Ltd.
Wooley Tool Co.
Worthington Corp.
Yale Machine Works
Youngstown Sheet & Tube Co.
Yowell Service Co.

Tips on Valves for Service Companies..

Ken Massey, Cardinal station manager, supervising sand frac job in West Texas. Note Rockwell-built Mudwonder valves on frac-head in background.

We maintain sand frac fluid pressure with Mudwonder Valves!

by Kenneth Massey,
Odessa Station Manager
Cardinal Chemical Company

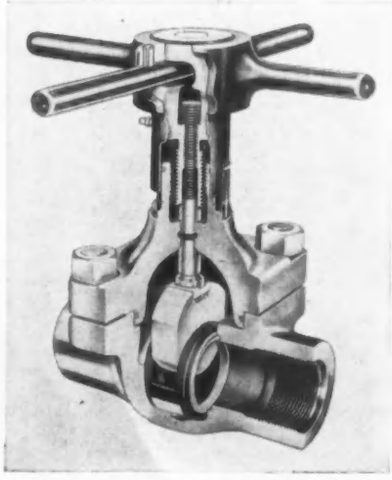
WE fracture oil wells. It's our job to get the maximum number of barrels pumped in the shortest possible time. That's why we use the best, most dependable equipment available—and drive it hard. When we finish pumping the sand frac fluid in under high pressure and close the well-head valves, we've got to be *sure* they don't leak. For two years now, we haven't had to worry. We find that well pressure never bleeds off when our Mudwonder valves are closed. There's no need to bump them shut or use a "cheater" to get drop-tight shut-off.

We now have 40 two-inch Mudwonders and several three-inchers. You might think maintenance would be a headache—but our Mudwonders don't seem to need much in the way of repairs. The only part that wears to any extent is the seat insert, which we can replace in a couple of minutes between jobs.

At the present time, we're using Mudwonders at all of our stations—Odessa and Levelland, Texas, and at Hobbs, New Mexico. We're thoroughly sold. Mudwonder valves are doing a great job for us, both on sand fracing and in acidizing.

Mudwonder valves are built in 2″, 3″ and 4″ sizes; with screw or flange ends; for 2000 psi WP (4000 psi test) and 3000 psi WP (6000 psi test) service. See your favorite oil field supply store, or write Edward Valves, Inc., East Chicago, Indiana, subsidiary of Rockwell Manufacturing Company.

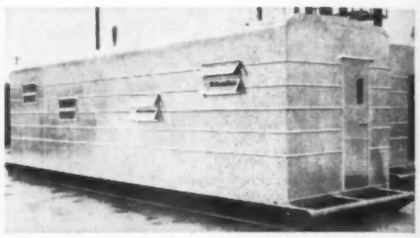
Mudwonder cut-away view shows the one-piece seat insert, with Buna-N molded integrally over steel wear rings; chromed gate with "T" slot connection; separated stainless stem and double thread construction.



Adv.

other products, according to a joint announcement by the Ben F. Kelley Co., Inc., and Ideco.

Ideco will handle sales and service of Kelco spinning and breakout catheads, air-operated slips and Fulgrip tubing tongs. No change will be made in Kelco representation within the U. S. and Canada.



This aluminum-clad bunkhouse is a member of the equipment which will be sent to Iran by Houston Ready-Cut. It is completely air-conditioned and electrically heated.

Houston Ready-Cut House Co. Completes 40 Active Years

Houston's Ready-Cut House Company rounds out 40 years of producing prefabricated housing. Houston Ready-Cut House Company was founded in 1917 by J. H. Suttles, Sr., and E. L. Crain. For 40 years it has done business in the same location, under the management of the Suttles family.

Originated to fill the serious need for quick construction in the earlier days of the vast and rapid expansion of oil development, Houston Ready-Cut House Company has pioneered in prefabricated housing. Ready-Cut houses and industrial buildings can be found in nearly all the oil fields of the Southwest, and in many of the Central and South American fields. At times, the Company has built entire camps that are small towns in themselves.

Typical of Houston Ready-Cut's service to the oil industry is a current project for construction of two complete portable camps for the SEACAT Drilling Company of Iran.

National Supply of Venezuela Opens Fourth Oil Field Store

The National Supply Company of Venezuela, C. A., has opened an oil field supply store at Barinas, in western Venezuela. This is the company's fourth store, the others being at Maracaibo and Las Morochas in the west and Anaco in the east.

R. S. Bernstein is store manager.

Lone Star's 1957 Expansion To Be Completed in Early 1958

An $8,000,000 expansion program, begun in 1957 and due for completion early in '58, highlights activities at Lone Star Steel Company. The program includes a stretch-reducing mill, bar mill and another open hearth furnace.

The new stretch-reducing mill will substantially increase Lone Star's supply of tubing. This mill, currently going through "break-in" runs, will use Lone Star's 5½ inch casing, and by a stretching and reducing operation, draw it down to the smaller sizes of tubing such as 2⅜ inch.

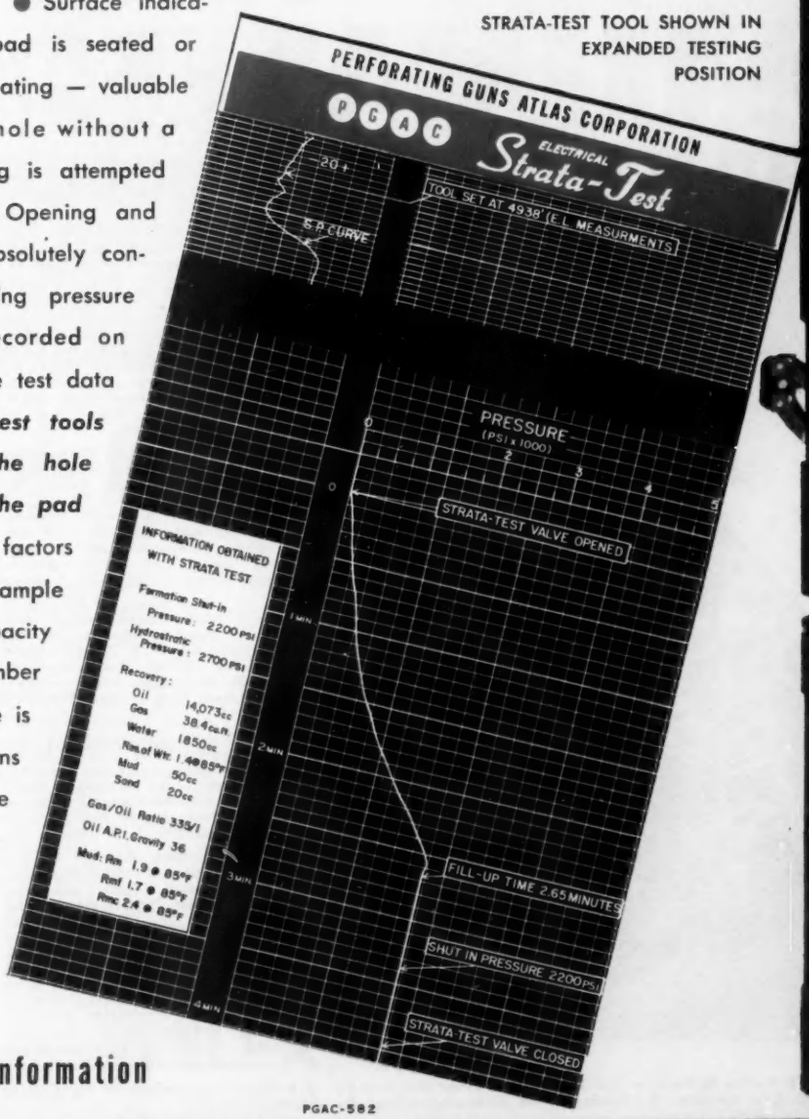
The bar mill actually will make use of a by-product of the electric weld pipe mills. In the latter operation, a strip of steel is trimmed from each side of the plate in preparing the material for the weld-

Strata-Test...

the Sure and Safe, Quick Way to test formations by wireline

Here's WHY it is more dependable:

Positioning of PGAC's Strata-Test tool in the hole is pin-pointed by correlating its S.P. with the S.P. of a previously run Electrical Log and Micro Survey. ● Seating and retracting of sealing pad is completely controlled from surface. ● Surface indication reveals whether sealing pad is seated or tool fully extended without seating — valuable knowledge if tool is run in hole without a previous caliper log and setting is attempted in an enlarged hole area. ● Opening and closing of sampling valve is absolutely controlled from surface. ● Sampling pressure during test is continuously recorded on surface log — providing complete test data for reservoir study. ● ***Strata-Test tools have never been stuck in the hole because of failure to break the pad seal*** — due to unique safety factors provided for this purpose. ● Sample chambers of 1, 5 or 6 gallons capacity are offered. When the 6-gal. chamber is run, the last gallon of sample is isolated from the first five gallons — which helps to give a more representative sample of formation content.



STRATA-TEST TOOL SHOWN IN EXPANDED TESTING POSITION

Write today for further information

PGAC-582

PERFORATING GUNS ATLAS CORPORATION

Houston, Texas Telephone REpublic 4-1651
General Offices and Main Plant: 7730 Scott Street — Sales Office: Melrose Building

PGAC OIL FIELD SERVICES

CALL FOR PROMPT SERVICE — ALWAYS READY TO SERVE YOU

TEXAS: Alice — Beaumont — Bridgeport — Colorado City — Corpus Christi — Crane — Dallas — Fort Worth — Gainesville Houston — Longview — Midland — Odessa — Pampa — Victoria — Wichita Falls. ARKANSAS: Magnolia. OKLAHOMA: Oklahoma City — Pauls Valley — Perry — Tulsa. NEW MEXICO: Farmington — Hobbs. MISSISSIPPI: Laurel. LOUISIANA: Buras — Houma — Lafayette — Lake Charles — Shreveport. KANSAS: Great Bend — Liberal.

AFFILIATE COMPANIES: CANADA — Perforating Guns of Canada, Ltd.; Edmonton, Alberta
GERMANY — Atlas Deutsch- Amerikanische Olfelddienst G. m. b. H.; Kiel VENEZUELA — Servicios Tecnicos Atlas, C.A., Caracas

ing machine. This strip, heretofore remelted, will be sent to the bar mill where it will be formed into reinforcing bars for the construction industry.

The new open hearth furnace becomes the fifth in Lone Star's battery. It will be identical to the present four furnaces, and will increase the company's production of steel ingots by about 20 percent.

ALCO Products Adds Warehouse In Odessa-Midland Territory

ALCO Products, Inc., has completed an oil field equipment warehouse and office in the Odessa-Midland area. The new facilities to serve the West Texas-New Mexico region, include complete testing and repair service.

Area manager for West Texas and New Mexico is O. C. (Lefty) Sloan, who has been associated with ALCO for seven years. Warehouseman is Leroy Pope. Sales representative for that area is Bill Rogers.

World's First Fracturing Barge To Be Delivered by Halliburton

The world's first oil well fracturing barge soon will go into service on Venezuela's Lake Maracaibo.

The 130-foot steel "Halliburton 808" is the first fracturing units built for water locations. It will be used by Cia. Halliburton de Cementacion y Fomento, the Venezuelan subsidiary of Halliburton Oil Well Cementing Co.

"Both the barge and its equipment were designed for the unusual assignment of fracturing wells at water locations," said Ralph R. Emery, Halliburton's vice president for foreign operations. "Based on an average 1500 sack fracturing job, the '808' will do the work of two fracturing trailers, a sand proportioner truck, six sand transports and probably a dozen oil transports that would be required for a comparable fracturing job on land."

Shake-down cruise of Halliburton 808, world's first fracturing barge, is conducted in Louisiana waters. Built at New Orleans, the 808 was towed to Venezuela for use at Lake Maracaibo locations.

Allis-Chalmers' mobile unit substation's transformers are oil-filled, self-cooled design and are throat-connected to a low-voltage breaker. The breaker controls two outgoing circuits.

Allis-Chalmers' Mobile Units To Help Energize Puerto Cabello

Three 1500-kva Allis-Chalmers mobile substation transformers are for use by the Ministry of Development at Puerto Cabello, Venezuela, in energizing the booming oil and ore industries in that area. They will also be used to re-develop the harbor in a modernization program.

The mobile transformers were towed in convoy from Allis-Chalmers Pittsburgh Works to the Port of New York where they were loaded aboard the Sucre for shipment to Puerto Cabello.

BRITISH H/E MADE

300 P.A. TRACTOR DRILLMASTER

MULTI-PURPOSE · HIGHLY MOBILE

The Hands-England 300 P. A. Drillmaster Rotary Drill is now available mounted on a Fordson Major Industrial Tractor and is illustrated on left.

This design provides great manoeuvreability and is intended primarily to enable the well known H/E Drillmaster 300 P. A. Rotary Drill to be used for Quarry and Open Cast blast hole, shot hole, auger, core or sample drilling.

Although the H/E Drillmaster 300 P. A. mounted on a diesel engined agricultural tractor, is ideal for Quarry and Open/Cast operations, it is equally applicable to some difficult "off the road" locations, such as may be encountered during seismic exploration or shot hole drilling.

In areas where a light drill with high tractive effort and good manoeuvreability is required, the H/E Tractor Drillmaster will be found to have much advantage over the conventional type of truck mounted drill.

Standard equipment provides for drilling holes of 2⅜" to 4" in diameter or to ream out 2⅜" diameter holes to larger sizes. Extra equipment can be supplied for cutting larger holes up to 5⅝" diameter, if desired.

For flushing cuttings to the surface an air compressor can be mounted directly onto the H/E Tractor Drillmaster and driven by the Tractor Engine. The compressor can achieve an up-hole annular velocity of 3,000 ft. per min.—using 'B' rod and 3" dia. bits. If air drilling is to be employed for larger holes, or where mud circulation is necessary, the equipment for these operations must be mounted on a separate trailer or tractor.

The H/E Tractor Drillmaster will be found to cover the majority of drilling requirements of the Quarry and Open Cast operator, the Geologist, the Mineralogist, and the Geophysicist.

Write for illustrated folders giving full details and specifications of this equipment.

HANDS-ENGLAND OILFIELD EQUIPMENT LTD

MANUFACTURERS OF GEOPHYSICAL SUPPLIES

LETCHWORTH HERTS ENGLAND TEL: 600 CABLES: OIL LETCHWORTH ENGLAND

Exclusive licensees in Western Germany: August Goettker Flachbohrungen, 20a Wathlingen Kreis Celle, West Germany

Need Extra Copies Of This Issue?

A limited number of extra copies of this issue were printed and can be obtained at $1 a copy. Send your order and remittance to:

WORLD OIL
P. O. Box 2608
Houston 1, Texas

Provides High Productivity... Anytime

After any perforating job, it is the production of the well that shows the difference between just perforating and perforating with the Welex Star-Jet. The Star-Jet is designed to give greater performance at less cost per perforation than any other standard perforator. Exhaustive laboratory and field testing have proved the Welex Star-Jet is the most economical perforator for the production it delivers. In tests conducted under the most strict regulations, the following official performance data was obtained: Entrance Hole — 0.50″, Penetration Depth — 9.00″ and Hole Volume — 29.00 cc.

The Welex Star-Jet is the newest shaped charge for casing perforating in the Welex line of unexcelled perforators. The Star-Jet is available, from any Welex district operating office, in three sizes — 3⅜″, 4″ and 5″ casing guns. Compare the results of the Star-Jet with any other standard perforator in field use today and you have proof that the Welex Star-Jet is the only standard perforator that gives you this outstanding performance at a minimum expense. Call your nearest Welex representative for the Welex Star-Jet and other top flight wireline service wherever and whenever it is needed.

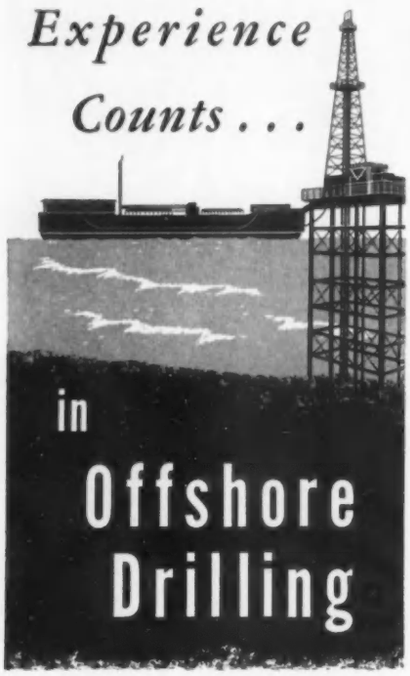
ORIGINATORS OF Welex JET PERFORATING

WELEX, INC.

Fort Worth, Texas

*Trademark of Jet Research Center, Inc.

Division offices in Dallas, Denver, Houston, Los Angeles, Midland, New Orleans, Tulsa and Wichita • Subsidiaries in Canada, Peru and Trinidad



and so does . . .

EQUIPMENT

Reading and Bates operates two Levingston offshore drilling tenders with National Supply Co. Type 130 rigs, capable of drilling to a depth in excess of *20,000* feet in water *100* feet deep.

DEPENDABILITY

Reading and Bates is a dependable contractor with seasoned, experienced men operating their rigs. Contracts are fulfilled to the last letter.

KNOWLEDGE

Reading and Bates are specialists in offshore drilling. Their basic knowledge of offshore drilling problems, plus their wide experience, assures you of a job well done.

READING & BATES
OFFSHORE DRILLING CO.

- 1502 Philtower Bldg., Tulsa, Oklahoma
- 820 Maritime Bldg., New Orleans, Louisiana

SQUEAKS from the BULLWHEEL

Squeaks from the Bullwheel

If we can remember so many jokes
With all the details that mold them,
Why can't we recall, with equal skill,
All the times we've told them.

Dubious Luck

Did you hear about the guy who'd been unlucky all his life. But things changed—when they dug his grave they struck oil.

Poor But Honest

Little Billy was continually goofing off in class and never paying attention to the teacher's lesson.

After spending a whole day on The Declaration of Independence, the teacher asked Billy, "Who signed the Declaration of Independence?"

Billy had to confess he didn't know one person who signed it. Exasperated, the teacher told him to go home and to bring

KING CIRCULATING HEAD AND STRIPPER

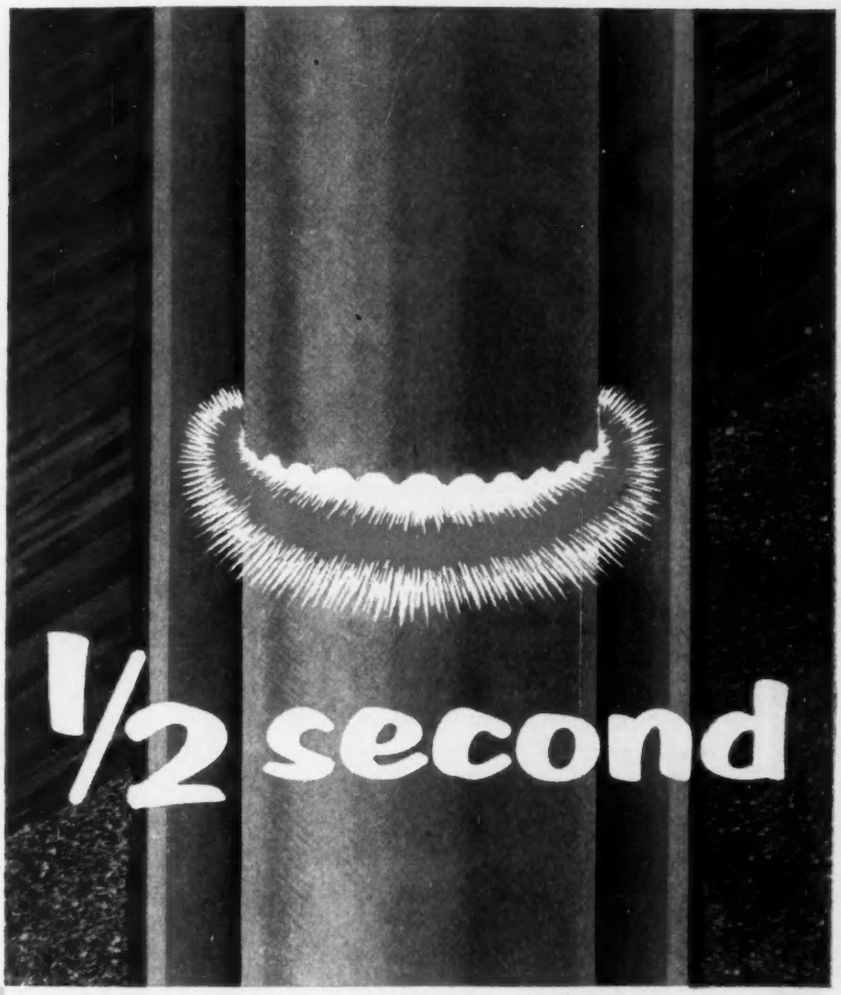
Type 4-SC Circulating Head and type AR Wire-Line Stripper often used in combination for wire line coring, sidewall coring, sidewall sampling, and well logging.

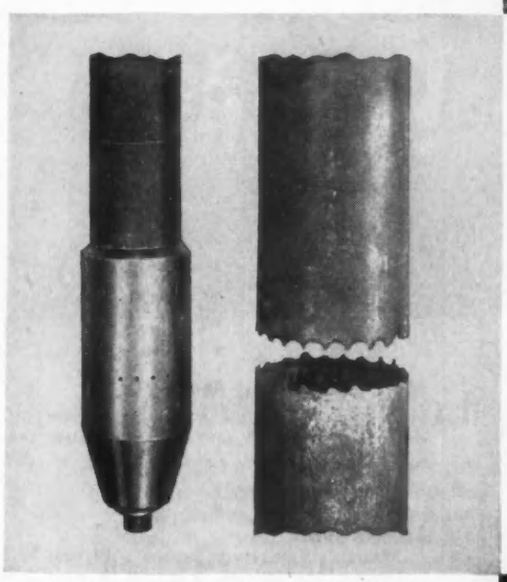
The 4-SC is the first circulating head designed to withstand any considerable rotation, will control highest pressures of deep well drilling.

Type 3-AR and 4-AR Strippers are also used separately for swabbing, bailing, etc.

KING OIL TOOLS
P. O. BOX 15146 • 7944 DOCKAL RD. • HOUSTON 20, TEXAS • OR 3-3421

Cuts Tubing in ½ second





Above, left—cutter head of the McCullough Chemical Tubing Cutter showing the orifices from which the chemical is ejected under enormous pressure, cutting the tubing in a fraction of a second.

Above, right—sample of 2½" tubing cut by Chemical Cutter. Note the absence of flare, burrs, or distortion of any kind on either the O. D. or I. D.

McCULLOUGH CHEMICAL CUTTER

This "split-second" Chemical Tubing Cutter applies the enormous power of the halogen fluorides, under closely controlled conditions, to cut through tubing in only ½ second. It will save more than 80% of the rig time usually required to cut tubing by mechanical methods.

McCullough's Chemical Tubing Cutter, run on an electric wire line, makes a clean, flare-free cut. It will not damage the casing even though the tubing be as close as 1/64". The entire operation is junk-free, since no part of the cutter is expendable.

This revolutionary new service will gain you a substantial saving in both time and money on that next tubing job—ask your McCullough Service Engineer. Available for 2" and 2½" tubing at all McCullough Service Locations.

McCULLOUGH
TOOL COMPANY
Los Angeles Houston Edmonton
Cable Address: MACTOOL

Additional Service Representative:
Houston Oil Field Material Company, Inc.

Order Your Wire Line Services
With Confidence—
Call McCULLOUGH

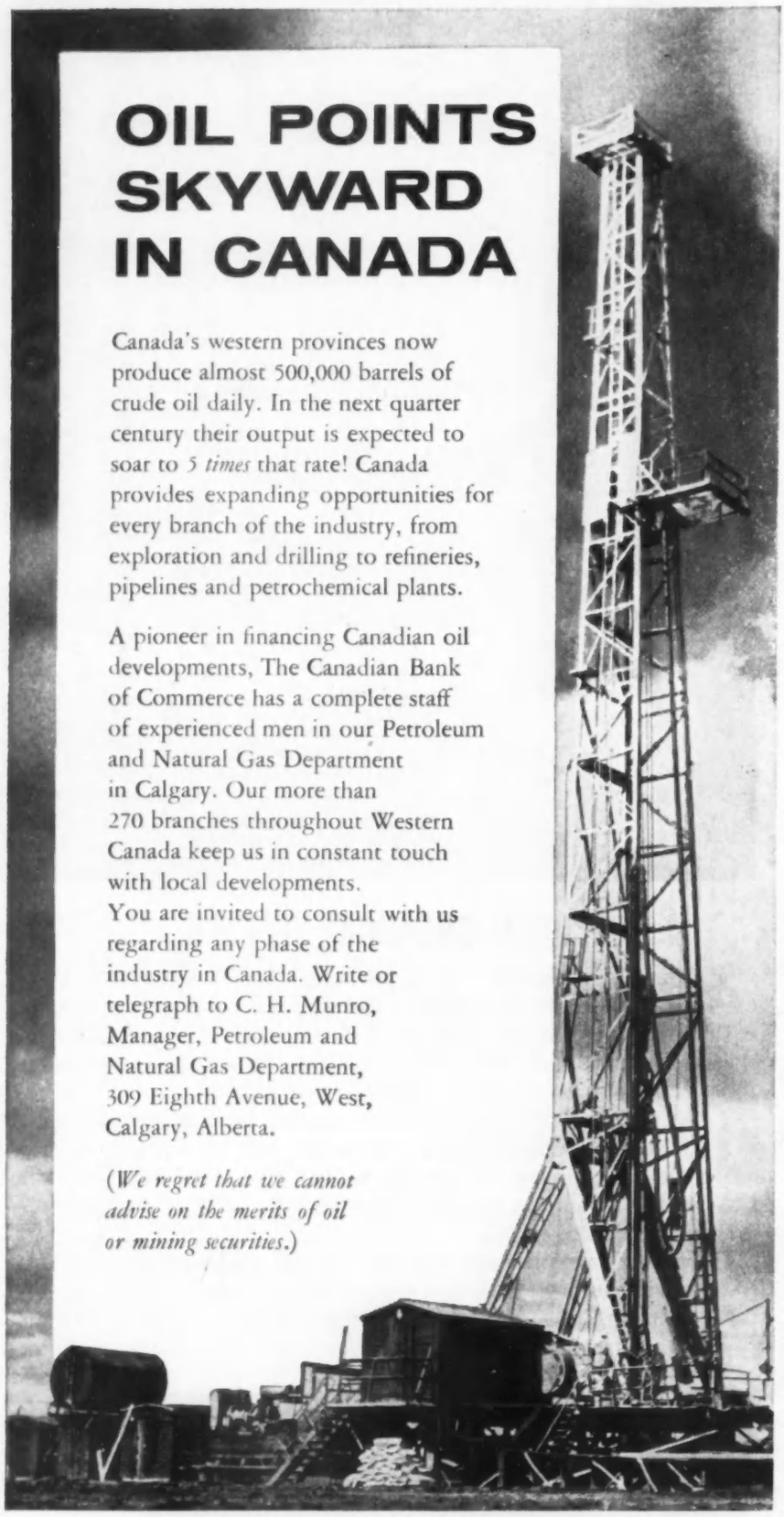
For more data on advertised products, use Readers' Service Cards, last page.

OIL POINTS SKYWARD IN CANADA

Canada's western provinces now produce almost 500,000 barrels of crude oil daily. In the next quarter century their output is expected to soar to 5 *times* that rate! Canada provides expanding opportunities for every branch of the industry, from exploration and drilling to refineries, pipelines and petrochemical plants.

A pioneer in financing Canadian oil developments, The Canadian Bank of Commerce has a complete staff of experienced men in our Petroleum and Natural Gas Department in Calgary. Our more than 270 branches throughout Western Canada keep us in constant touch with local developments.
You are invited to consult with us regarding any phase of the industry in Canada. Write or telegraph to C. H. Munro, Manager, Petroleum and Natural Gas Department, 309 Eighth Avenue, West, Calgary, Alberta.

(We regret that we cannot advise on the merits of oil or mining securities.)



THE CANADIAN BANK OF COMMERCE

Head Office Toronto 1, Canada

New York • San Francisco • Los Angeles • Seattle • Portland, Ore.
Resident Representative—Chicago and more than 765 branches across Canada

WORLD OIL

"I wish the company would change our route . . . I hate having to fly over those wildcat oil fields every day!"

his father back to school with him the next day.

The next day, Billy and his father came to school, and again the teacher asked, "Billy, tell me who signed the Declaration of Independence." Billy still didn't answer. His father fidgeted for awhile and finally took his son off in the corner and told him, "Now son, we may be poor but we're honest. If you signed that thing, you tell her!"

•

Legal Procedure?

Judge: "I'm sorry, but I can't issue a marriage license until you have properly filled out your form."

•

False Advertising

A hired girl out on a farm says that in spite of what the cosmetic ads claim, it's pretty near impossible to keep farm hands from getting rough.

•

T'aint Fair

"A banker tells a bad joke and nobody says anything about it. But, boy, just let a comedian pass a bad check!"

•

No Daughter of Mine . . .

A tobacco farmer refused to allow his daughter to enroll at college, because she had to use the same curriculum as the men!

•

Last Resort

Mama: "Let's buy Junior a bicycle."

Papa: "Do you think it will improve his behavior?"

Mama: "No, but it will spread his meanness over a wider area."

•

Economics

Professor: Is it wise to economize?

Student: I don't think so. I know a man who took long steps to keep from wearing out his $10 shoes and he split his $20 pants.

•

Trick or Trinket

Bill had just returned to his home in New York from a vacation in Texas. He

BJ's exclusive coil-flex fingers assure you a better scratching job every time!

Look at the way the coil-spring-enclosed scratching fingers always bounce back to their original shape and position. The same thing happens when your BJ Red Top Scratcher is down hole. You get a better scratching job with fewer strokes because, unlike with an ordinary straight-wire scratcher, the Red Top's fingers never get kinked or bent out of shape—neither during installation nor in use—but stay at peak efficiency throughout their use.

Only the BJ Red Top scratcher has double-spring construction throughout. Each finger has a cluster of straight wires—for better scratching—encased in a tight coiled spring—for positive bounce-back.

Byron Jackson Scratchers are manufactured in sizes to fit all API casing OD's from 4½" to 13⅜". Every model features a sturdy hinged clamp-around design.

Specify BJ Red Tops next time and assure yourself better scratching and better cementing. They're sold through recognized supply stores and stocked in all BJ warehouses.

Byron Jackson Tools, Inc.

A SUBSIDIARY OF BORG-WARNER CORPORATION

P.O. Box 2017A, Terminal Annex, Los Angeles 54, California • Cable: "BJTOOL"
Export Address: 580 Fifth Avenue, Suite 510, New York 36, New York

WATCH BJ FOR THE NEWEST

The spring's the thing with BJ Red Top Centralizers too.

Write for literature that describes their unique design and operation.

INCREASE PRODUCTION

CLEAN OUT CHOKING SAND

Excessive sand and sediment holds back your oil. For fast, easy clean out with fewer round trips and less down-time, use world famous Miller Sand Pumps.

SAND PUMP SIZES

O.D.—2½, 3, 3½, 4¼, 5, 5½, 7 In.
Lengths—20, 25, 30 ft.

Composite Catalog, Page 3419

Write for descriptive price list

MILLER SAND PUMPS

Miller Sand Pump Co.

General Offices, Box 4516
Oklahoma City 9, Okla.

EXPORT OFFICES
30 Rockefeller Plaza
NEW YORK CITY 20, N. Y.

"He's in charge of all our offshore installations!"

greeted his wife by giving her several mink coats, four Cadillacs and scads of money.

"How in the world did you get all these things?" she demanded.

"Shucks, honey, it was easy, I was in Houston during Hallowe'en and went out playing trick or treat."

His Downfall

Prisoner, to fellow inmate: "I was making big money—about a quarter of an inch too big."

Grass Is Always Greener

A man is that large irrational creature who is always looking for home atmosphere in a hotel and hotel service around the home.

It'll Get Cold

The mother lion saw her young offspring chasing a hunter around and around a tree. "Baby," she called, "don't play with your food."

What's That Again?

Co-ed to new boy friend: "Why did you break your engagement?"

Boy Friend: "She wanted to get married!"

The Brave Birds

A none-too-modest hunter, on a hunting trip, took aim and fired, but the bird sailed on undisturbed. The marksman watched it in dazed silence then dashed his gun on the ground and shouted, "Fly on, you blankety-blank fool bird! Fly on with your gol-durned heart shot out."

Impatience

A woman riding a bus was anxious not to pass her destination. She poked the driver with her umbrella, and inquired, "Is that the National Bank?"

"No, ma'am," he replied, "that's my stomach."

In Retrospect

Whatever I said in anger,
Whatever I shouted in spite,
I'm sorry I spoke so quickly—
I thought up some worse ones tonight!

follow the factory's lead . . . get better service from your

Waukesha MOTOR

GAS ENGINES

STITT
NEW TRIPLE IGNITOR
SPARK PLUGS

Waukesha is now factory-installing STITT New Triple Ignitor Spark Plugs in all gas engines . . . STITTS cost a little more—save hundreds of dollars per engine per year because they last longer, cut downtime substantially, increase magneto life, require less service. Also, factory equipment in Clark, Cooper-Bessemer, Worthington, other leading engines.

Write today for new Application Chart—matches spark plug recommendations to engine service —you'll get better plug performance.

STITT

STITT IGNITION CO.
COLUMBUS 1, OHIO

STITT MAKES HEAVY-DUTY, INDUSTRIAL-TYPE PLUGS!

Raw Water

Internationally Controlled with

SAND-BANUM

Pure Colloidal Concentrate for ALL types of Boilers

Ounces only once a week safely and automatically remove and prevent boiler scale and corrosion without tools, manual labor; more power from less fuel.

SAND-BANUM SPECIAL

In Handy Tablets for ALL Radiator Cooling Systems—Stationary or Mobile

Regular use of Sand-Banum Special maintains the cooling system free from rust, crust, sludge, dirt, oil, grease and lime; any and all clogging matter.

SABCO
Rust Preventive Aluminum Paint; 2 coats in 1 application.

RUSTEND
Clear Rust Arrestor—Rust Preventor

SABANOL
for maximum, clean burnability of ALL grades of fuel oil

Stocked by Leading Supply Houses

GULF COAST DISTRICT REPRESENTATIVES
Western Sand-Banum Co., 1717 Chenevert St., Houston 2, Texas

AMERICAN SAND-BANUM CO.
ESTABLISHED 1926
MEADOW BROOK NATIONAL BANK BUILDING
FREEPORT, NEW YORK
SAND BANUM